# TRANSCRIPT OF RECORD.

## SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1923.

No. 139.

MARGARET C. LYNCH, EXECUTRIX OF THE LAST WILL AND TESTAMENT OF E. J. LYNCH, COLLECTOR OF INTERNAL REVENUE, DECEASED, PETITIONER,

vs.

TILDEN PRODUCE COMPANY.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE EIGHTH CIRCUIT.

PETITION FOR CERTIORARI FILED OCTOBER 16, 1923.
CERTIORARI AND RETURN FILED DECEMBER 24, 1923.

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a Pleas and proceedings in the United States Circuit Court of Appeals for the Eighth Circuit, at the May term, 1922, of said court, before the Honorable John E. Carland, circuit judge, and the Honorable Jacob Trieber and the Honorable Thomas C. Munger, district judges.

Attest:
[SEAL.]

E. E. KOCH,
*Clerk of the United States Circuit Court of Appeals for the Eighth Circuit.*

Be it remembered that heretofore, to wit, on the eleventh day of February, A. D. 1922, a transcript of record pursuant to a writ of error directed to the District Court of the United States for the District of Minnesota, was filed in the office of the clerk of the United States Circuit Court of Appeals for the Eighth Circuit, in a certain cause wherein Margaret C. Lynch, executor of the last will and testament of E. J. Lynch, deceased, was plaintiff in error and the Tilden Produce Company was defendant in error, which said transcript as prepared and printed under the rules of the United States Circuit Court of Appeals for the Eighth Circuit, under the supervision of its clerk, is in the words and figures following, to wit:

1 United States District Court,

District of Minnesota,

Third Division.

Pleas before the Honorable, the Judges of the District Court of the United States for the District of Minnesota, Third Division, at the June term, 1921, of said Court.

Tilden Produce Company, a corporation, Plaintiff,

vs.

E. J. Lynch, Collector of Internal Revenue, and Margaret C. Lynch, as Executrix of the Last Will and Testament of E. J. Lynch, deceased, Defendants. } No. 1126.

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Be It Remembered that on the 7th day of December, 1920, the plaintiff in the above entitled cause filed in the office of the Clerk of said Court a Complaint in the words and figures following, to-wit:

2 Complaint.

United States District Court

District of Minnesota

Third Division.

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Tilden Produce Company, a corporation, Plaintiff,

v.

E. J. Lynch, as Collector of Internal Revenue, Defendant.

The plaintiff complains of the defendant and for cause of action alleges:

I.

That during all times mentioned in the complaint the plaintiff was and is a corporation duly created, organized and existing under and by virtue of the laws of Minnesota, with its principal place of business at Saint Paul, Minnesota, and the business of plaintiff, among other things, has been and is the manufacture of butter.

II.

That the defendant now is and for several years last past has been a duly appointed, qualified and acting Collector of Internal Revenue for the District and State of Minnesota, with his office and principal place of business at Saint Paul, Minnesota.

III.

That in the year 1918 and prior to December 6th, 1918, the particular days not being here set out, but prior to the date of payment of the stamp taxes as hereinafter more particularly stated, and at times well known to them and the [the] defendant, certain officials of the Treasury Department of the United States, assuming to act under and by virtue of the laws of the United States, seized certain tubs of
3 butter then and there stored on the premises of the Chicago Cold Storage Warehouse Company, State Street plant, Chicago, Illinois, the property of the plaintiff, which contained in the aggregate 9360 pounds of butter, and the said butter was so seized upon the ground and for the reason, as claimed by such officials, that the butter was adulterated within the meaning and intent of the Act of Congress of May 9, 1902, in that said butter contained moisture in excess of 16 per cent, and the same had been manufactured and produced by the plaintiff at its plant in the City of Saint Paul, County of Ramsey and State of Minnesota.

IV.

That following the seizure of the said butter, as aforesaid, the Commissioner of Internal Revenue of the United States, assuming to act under the authority and pursuant to the Internal Revenue Laws of the United States, and the rules and regulations of the Treasury Department, assessed upon and against the plaintiff, stamp taxes of ten cents per pound on

the butter so seized, for the reason as stated by the said Commissioner that said butter was adulterated within the meaning and intent of the said Act of Congress of May 9, 1902, the aggregate of said stamp taxes so assessed being in the sum of Nine Hundred Thirty-six Dollars ($936).

V.

That after the seizure of said butter and after the assessment of said stamp taxes thereon, as heretofore set forth, the said Commissioner of Internal Revenue forwarded said assessment to the defendant as Collector of Internal Revenue, with instructions to collect the said assessment from the plaintiff, and the defendant by reason of the premises, demanded and caused to be demanded of the plaintiff payment of said sum of money, to-wit: Nine Hundred Thirty-
4 six Dollars ($936), as hereinbefore set forth and alleged.

VI.

That plaintiff was without other recourse or remedy and acting solely under the compulsion of the laws of the United States, and to avoid seizure and confiscation of its property, on the to-wit: 11th day of December, 1918, paid to the defendant under protest, the said sum of Nine Hundred Thirty-six Dollars ($936), which sum confessedly represents the stamp taxes at the rate of ten cents per pound so assessed by the said Commissioner on the said 9360 pounds of butter.

VII.

Plaintiff further alleges that during all times herein mentioned, including the year 1918, it was and still is engaged in the business of the manufacture of butter, but specifically denies that during the year 1918, or prior or subsequent thereto, it was engaged in the production and manufacture of adulterated butter as a business, or at all, and plaintiff denies that the butter seized as aforesaid was adulterated butter, and that its business subjected the plaintiff to the payment of the stamp taxes in question, as claimed by the officials of the United States, or otherwise, and the plaintiff further alleges that the act of the Commissioner of Internal Revenue in assessing and imposing the stamp taxes in question on the plaintiff as a manufacturer of adulterated butter, was and is wholly unauthorized, unlawful and illegal, and

plaintiff reasserts that it was at no time engaged in the production of adulterated butter, or at all.

VIII.

Plaintiff further alleges that after the payment of the sum of money as hereinbefore set forth and alleged, and on the blanks provided therefor by the Commissioner of Internal Revenue and the Treasury Department of the United States, as the Commissioner of Internal Revenue, the Treasury Department of the United States, and the defendant well know, it duly appealed to the Commissioner of Internal Revenue for a refund and repayment of the said stamp taxes, and all thereof, on the ground that said stamp taxes had been unlawfully and wrongfully imposed and that payment thereof had been made under protest, but notwithstanding said appeal and the good and sufficient ground therefor, the said Commissioner of Internal Revenue by letter addressed to the plaintiff on the to-wit: 24th day of November, 1920, refused said appeal and rejected the same, and refuses and continues to refuse to refund and repay said sum of money and the whole thereof, which refusal is contrary to law.

Wherefore, the plaintiff prays judgment against the defendant for the sum of Nine Hundred Thirty-six Dollars ($936) with lawful interest since December 11, 1918, together with costs and disbursements.

MOORE, OPPENHEIMER & PETERSON
Attorneys for Plaintiff,
1015 Merchants National Bank Bldg.,
Saint Paul, Minnesota.

State of Minnesota } ss.
County of Ramsey }

W. A. Tilden, being first duly sworn, deposes and says that he is the President of Tilden Produce Company, a corporation; that he has read the foregoing complaint and knows the contents thereof and the same is true of his own knowledge, except as to those matters therein stated on information and belief, and as to those matters he believes the complaint to be true.

W A TILDEN

Subscribed and sworn to before me this 4 day of December, 1920.

WILLIS R BEARDSLEY
(Seal) Notary Public, Ramsey County, Minn.

My Commission expires Jan. 26-1921

Endorsed: Filed in the District Court on December 7, 1920.

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6 (Summons and Marshal's return of Service.)

The President of the United States of America,

To the Defendant.... Above Named, Greeting:

You are hereby summoned and required to answer the complaint in this action, which has been filed in the office of the Clerk of this Court, in the City of St. Paul in said District of Minnesota, Third Division, and file your answer in said Clerk's office within Twenty days after the service hereof, excluding the day of such service, and if you fail to answer the complaint as aforesaid, the Plaintiff.. will take judgment against you in the sum of $936.00, with interest thereon since December 11, 1918, together with its costs and disbursements herein.

For the Marshal of the United States for the District of Minnesota to execute.

Witness: The Honorable Wilbur F. Booth, Judge of the District Court of the United States of America, for the District of Minnesota, at St. Paul in said District, this 7th day of December, in the year of our Lord one thousand nine hundred and twenty, and of our Independence the one hundred and forty-fifth year.
(Seal)

CHARLES L. SPENCER,
Clerk.

By MARGARET L. MULLANE,
Deputy.

MOORE, OPPENHEIMER & PETERSON,
[Plaintiff Attorney.]

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6a Form No. 282.

Return on Service of Writ.

United States of America, } ss.
District of Minnesota }

I hereby certify and return that I served the annexed Summons on the therein-named E. J. Lynch as Collector of Internal Revenue by handing to and leaving a true and correct copy thereof with him personally at St. Paul, in said District on the 9th day of December, A. D. 1920

JOSEPH A. WESSEL
U. S. Marshal.

By S. J. PICHA,
Deputy.

Endorsed: Filed in the District Court on Dec. 10, 1920.

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7 Answer.

Defendant, for his answer to the complaint of the plaintiff herein, denies each and every allegation, matter and thing in said complaint contained, and each and every part thereof, except as hereinafter admitted, qualified or explained.

I.

Defendant admits the allegations contained in Paragraph I of plaintiff's complaint.

II.

Defendant admits the allegations contained in Paragraph II of plaintiff's complaint.

III.

As to Paragraph III of plaintiff's complaint, defendant admits that in the year 1918, prior to the dates of payment of stamp taxes, as set forth in plaintiff's complaint, certain officials of the Treasury Department of the United States had seized certain tubs of butter which contained in the aggregate nine thousand six hundred and thirty (9,630) pounds

of butter, the property of plaintiff, and defendant alleges that said butter had been manufactured by the plaintiff, and defendant admits that said butter was so seized by said officers upon the ground and for the reason, as claimed by such officials, that such butter was adulterated within the meaning and intent of the Act of Congress of May 9, 1902, and alleges that said butter contained an abnormal quantity of water, and for that reason was adulterated butter
8 within the meaning of the aforesaid act, and defendant denies all of the other allegations in said Paragraph III contained.

IV.

As to Paragraph IV, defendant admits that following the seizure of said butter, the Commissioner of Internal Revenue of the United States, acting under the authority and pursuant to the Internal Revenue laws of the United States, and the rules and regulations of the Treasury Department, assessed upon and against the plaintiff, stamp taxes of ten cents per pound on the butter so seized, for the reason, as stated by said Commissioner, that said butter was adulterated within the meaning and intent of said Act of Congress of May 9, 1902, the aggregate of said stamp taxes, so assessed, being in the sum of Nine Hundred and thirty-six Dollars ($936.00).

V.

As to Paragraph V, defendant admits the allegations therein contained.

VI.

As to Paragraph VI, defendant denies all of the allegations therein contained, except that he admits that plaintiff paid the sum, as set forth in said paragraph, on the date therein set forth.

VII.

As to Paragraph VII, defendant admits that during all of the times therein mentioned, including the year 1918, plaintiff was, and still is, engaged in the business of the manufacture of butter, and denies all of the other allegations in said paragraph VII contained.

## VIII.

As to Paragraph VIII, defendant denies all of the allegations therein contained, except that he admits that the plaintiff appealed to the Commissioner of Internal Revenue for the refund and repayment of the amount paid as aforesaid, and that such refund and repayment was refused on such appeal.

Further Answering Said Complaint, defendant alleges that during the times in said complaint mentioned, plaintiff
9 manufactured the butter therein mentioned. That the same, and all thereof, was adulterated butter, for the reason, among others, that in the manufacture and manipulation of said butter, the process and material used by the plaintiff had the intent and effect of causing the absorption and retention of abnormal quantities of water, milk, and cream, and other forms of moisture, in violation of the Act of Congress of May 9, 1902, and pursuant to the statutes of the United States, the Commissioner of Internal Revenue did, in due form of law, levy and assess upon and against said plaintiff, on account of said adulterated butter, the aforesaid sum of money, which levy and assessment, and the payment made thereunder, represents the identical sum of money mentioned in said complaint, and said money was paid to and received by said defendant pursuant to said assessment by the Collector of Internal Revenue in his official capacity as Collector of Internal Revenue for the State and District of Minnesota, and not otherwise.

Wherefore, defendant demands judgment, that the plaintiff take nothing by this action, and that he recover his costs and disbursements herein.

ALFRED JAQUES
United States Attorney.

Endorsed: Filed in the District Court on March 17, 1921.

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10 Reply.

Except as the answer of the defendant admits the allegations of the complaint, the plaintiff denies each and every allegation, matter, fact and thing of new matter in said answer contained.

Wherefore the plaintiff prays judgment as demanded in the complaint.

MOORE, OPPENHEIMER & PETERSON,
Attorneys for the Plaintiff,
1015 Merchants Nat. Bk. Bldg.,
St. Paul, Minnesota.

Endorsed: Filed in the District Court on March 26, 1921.

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11 (Jury impaneled, Trial June 20, 1921.)

Before Judge Booth. June Term, A. D. 1921.

The above entitled cause coming on this day to be tried to the Court and a jury, the plaintiff appears by George W. Peterson, Esq., its attorney, and the defendant appears by Alfred Jaques, Esq., United States Attorney. And a jury, having been called, comes as follows, to-wit:- Louis Lohman, R. R. Ruffcorn, F. A. Thomas, Merritt Ayotte, O. G. Bundlie, Elmer Young, J. McGill Smith, William O'Donnell, William Pierce, Swan Anderson, Forest Graham and A. L. Swanson, being twelve free and lawful men who are duly empanelled as a jury and sworn to try the issues joined herein.

Mr. Peterson opens and states the case to the Court and jury on the part of the plaintiff.

William A. Tilden, Walter B. Fadden, John Bower, Gertrude Scheipl and Frank Dorniden are sworn, are examined and testify as witnesses on the part of the plaintiff.

And the further trial of this cause is continued until ten o'clock A. M., of the following day.

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12 (Trial, June 21, 1921.)

Before Judge Booth. June Term, A. D. 1921.

The parties to the above entitled cause appearing in court this day by their attorneys, respectively, as on the preceding day, the jury having been called, and all being present, the further trial of this cause proceeds as follows:-

Frank Dorniden, recalled, is examined and further testifies as a witness on the part of the plaintiff.

The following witnesses are sworn, are examined and testify on the part of the plaintiff: Arthur L. Radke, Henry Duvel, John J. Farrell, Scott E. Forgy and Levi G. Nutt.

And here the plaintiff rests its case.

Mr. Jaques opens and states the case to the Court and jury on the part of the defendant.

Edward M. Marcy and James M. Doran are sworn, are examined and testify as witnesses on the part of the defendant.

And the further trial of this cause is continued until ten o'clock A. M. of the following day.

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13 (Trial, June 22, 1921.)

Before Judge Booth. June Term, A. D. 1921.

The parties to the above entitled cause appearing in court this day by their attorneys, respectively, as on the preceding day, the jury having been called, and all being present, the further [ttial] of this cause proceeds as follows:—

James M. Doran, recalled, is examined and further testifies as a witness on the part of the defendant.

Ole O. Storvick, Martin Mortenson and James Sorenson are sworn, are examined and testify as witnesses on the part of the defendant.

And the further trial of this cause is continued until ten o'clock A. M. of the following day.

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14 (Trial June 23, 1921; Verdict and Judgment.)

Before Judge Booth. June Term, A. D. 1921.

The parties to the above entitled cause appearing in court this day by their attorneys, respectively, as on the preceding day, the jury having been called, and all being present, the further trial of this cause proceeds as follows:—

Martin Mortenson, recalled, is examined and further testifies as a witness on the part of the defendant.

Peter Valaer is sworn, is examined and testifies as a witness on the part of the defendant.

And here the defendant rests his case; and the testimony is closed.

A motion made on the part of the plaintiff for a directed verdict in its favor is granted by the court.

And thereupon the said jury, without leaving their seats, do render their verdict wherein, by their foreman, they do say that they "by direction of the Court find for the plaintiff and assess its damages at the sum of One thousand seventy-three and 59/100 Dollars ($1073.59)."

Wherefore, by reason of the verdict aforesaid, it is by the Court

(Judgment, June 23, 1921.)

Considered, Ordered and Adjudged that said plaintiff, Tilden Produce Company, a corporation, do have and recover of and from the defendant, E. J. Lynch, as Collector of Internal Revenue, the sum of One thousand seventy-three and 59/100 Dollars ($1073.59), together with the costs and disbursements of said plaintiff in this behalf expended, to be taxed, and that said plaintiff do have execution therefor. And it is further by the Court

Ordered:- that all proceedings herein, excepting the
15 taxation of costs and the entry of judgment therefor, be, and the same hereby are stayed for a period of forty-two (42) days from this day to enable defendant to prepare and present a bill of exceptions and make a motion for a new trial or take such other action in the premises as he may be advised.

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16 (Stipulation that Margaret C. Lynch, Executor, may be substituted in lieu and place of E. J. Lynch, deceased.)

It Is Hereby Stipulated, by and between the parties to the above entitled action:—

I.

That since the entry of judgment in the above entitled action against E. J. Lynch, Collector of Internal Revenue for the District of Minnesota, and in favor of the plaintiff, said E. J. Lynch has died.

II.

That the said E. J. Lynch, in his lifetime, made a will whereby his wife, Margaret C. Lynch, was made executor of such last will and testament of the deceased; that said will has been probated in the Probate Court for Ramsey County, Minnesota, and that upon the probating of such will, the said Margaret C. Lynch was duly appointed executor under said will of the estate of her husband, E. J. Lynch, deceased, and has qualified as such, and is acting as such.

III.

That said Margaret C. Lynch, Executor, has authorized Alfred Jaques, United States Attorney for the District of Minnesota, to appear for her in all cases which may arise where it is sought to recover from said E. J. Lynch, or his estate, taxes heretofore collected by said E. J. Lynch,
17 Collector, and in all cases where before the death of said E. J. Lynch, Collector, judgments for taxes may have been entered against said E. J. Lynch, and it may be thought advisable by the United States Attorney to sue out a writ of error, or enter an appeal, in such cases, and has authorized such United States Attorney to have herself as executor made a defendant in such cases, or be substituted as defendant as executor of the last will and testament of E. J. Lynch.

Now Therefore, It Is Stipulated and Agreed, by and between the parties to this action, that the Court may enter an order making the aforesaid Margaret C. Lynch, Executor of the estate of E. J. Lynch, deceased, a party defendant to the above entitled action, and that as such defendant she shall have and exercise, in connection with this case, all rights that the said E. J. Lynch, Collector, had or exercised in his lifetime, including the right to sue out a writ of error or secure an appeal herein.

MOORE OPPENHEIMER & PETERSON
[Attorney] for Plaintiff.

ALFRED JAQUES
United States Attorney
Attorney of record for the defendant E. J. Lynch, deceased, and for Margaret C. Lynch, executor of the estate of E. J. Lynch, deceased.

(Order substituting Margaret C. Lynch, Executor.)

Upon reading the foregoing stipulation, and on motion of Alfred Jaques, United States Attorney, it is

Ordered, that Margaret C. Lynch, Executor of the
18 Last Will and Testament and of the Estate of defendant E. J. Lynch, deceased, be, and she hereby is, made a party defendant in the above entitled action, with all the rights, and with power to exercise such rights, as the defendant E. J. Lynch would have had in connection with such case, if living, including the right to sue out a writ of error in such case, or to make an appeal therein.

WILBUR F. BOOTH
District Judge.

Endorsed: Filed in the District Court on December 17, 1921.

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19 (Bill of Exceptions.)

The above entitled action came regularly on for trial at the June A. D. 1921 term of said court, held in the City of St. Paul, in said district, the Honorable Wilbur F. Booth, Judge of said Court, presiding; the trial commencing on the 20th day of June, 1921.

George W. Peterson, Esq., appeared on behalf of the plaintiff;

Alfred Jaques, Esq., United States Attorney for said district, appeared for the defendant.

A jury was duly empaneled to try the action, and thereupon the following proceedings were had therein, to-wit:

20 William A. Tilden sworn, testified as follows behalf plaintiff:

By Mr. Peterson:

Q. Mr. Tilden, where do you live? A. I live in St. Paul.

Q. And how long have you lived in St. Paul? A. 31 years.

Q. What is your business?
A. I am in the produce business, also in several other kinds of business, the automobile business.

Q. That is, as far as this lawsuit is concerned. What rela-

tion do you bear to the plaintiff, the Tilden Produce Company, which brings this action?

A. I am president of the company.

Q. And how long have you been president of the company, Mr. Tilden?

A. About a dozen years, I guess, something like that,—ever since it has been the Tilden Produce Company.

Q. And what is the business of The Tilden Produce Company?

A. Well, we have several lines of business; the principal line of business the creamery business and the poultry business, egg business, cheese business.

Q. And you are active, are you, in the general management of the Tilden Produce Company? A. Yes sir.

Q. And supervise in a general way as manager the department of the Tilden Produce Company engaged in the manufacture of creamery butter? A. Yes sir.

Q. And in the year 1918, particularly in August and September, 1918, was the Tilden Produce Company also engaged in the manufacture of creamery butter? A. Yes sir.

Q. And you were president of the company at that time also? A. Yes sir.

Q. You are not a chemist, and you are not a practical buttermaker, Mr. Tilden, in the sense that you personally attend to the making and the manufacture of the butter?

A. I am not.

21 Q. I will hand you Plaintiff's Exhibit A, letter, which bears date November 19, 1918, and ask you to examine it. A. Ask what?

Q. Which is a letter which bears date November 19, 1918, and ask you to examine it. A. Yes sir.

Q. Have you read the letter, Mr. Tilden? A. Yes sir.

Q. Was that the first notice that you had of the seizure of the butter by the government and by the government officials, which is involved in this case? A. Yes sir.

Q. And that letter appears to come from whom?

A. This comes from the Chicago office, signed by Mr. Nut.

Q. And his title appears to be supervising agent of the Internal Revenue Service of the Treasury Department?
A. Yes sir.

Mr. Peterson: Offer the letter in evidence.

Mr. Jaques: No objection.

The Court: Received.

By Mr. Peterson:
Q. I hand you Plaintiff's Exhibit B, and ask you to examine that. The Witness: Yes sir.

Q. Is that the letter which you wrote in answer to Plaintiff's Exhibit A, the letter of November 19, 1918? A. Yes sir.

Mr. Peterson: Offer Exhibit B in evidence.

(No objection).

The Court: Received.

By Mr. Peterson:
Q. I ask you to look at Plaintiff's Exhibit C and examine that. Is that a letter which the Tilden Produce Company received from E. J. Lynch, Collector, the defendant in this case, with office in the City of St. Paul? A. Yes sir.

Q. This letter bears date December 3rd, 1918, and is a continuation of correspondence here? A. Yes sir.

22 Mr. Peterson: Offer Plaintiff's Exhibit C.

Mr. Jaques: No objection.

The Court: Received.

By Mr. Peterson:
Q. I show you Plaintiff's Exhibit D, which appears to be a letter bearing date December 6, 1918, written by the Tilden Produce Company to Mr. Lynch, and I will ask you to examine it. Is that an answer to the previous letter, Plaintiff's Exhibit C? A. Yes sir.

Mr. Peterson: Offer Plaintiff's Exhibit D in evidence.

Mr. Jaques: No objection.

The Court: Received.

Q. I will show you plaintiff's Exhibit E, and ask you if that is the receipt showing the payment of $936.00 by the Tilden Produce Company, under protest, on December 11, 1918? A. Yes sir, it is.

Mr. Peterson: Offer it in evidence.

Mr. Jaques: No objection.

The Court: Received.

By Mr. Peterson:

Q. I show you Plaintiff's Exhibit F, which appears to be a letter received by the Tilden Produce Company from the Commissioner of Internal Revenue, bearing date November 24, 1920, and I will ask you to read it. Did you receive that letter? A. Yes sir.

Mr. Peterson: Offered in evidence.

Mr. Jaques: No objection.

The Court: Received.

By Mr. Peterson:

Q. Mr. Tilden, what was the output of your creamery in August and September, 1918, when this butter was seized?

A. Do you mean per month?

23 Q. Answer it in your own way, per day or per month or per year?

A. Well I should judge they were running about 40 (thousand) or 50,000 lbs. of butter a week at that time.

Q. Week? A. Yes sir.

Q. And this is the first lot of butter of the Tilden Produce Company while you have been connected with it that has been seized on the claim that it contained excessive moisture?

A. Yes sir.

Q. And whatever information was requested by the government officials from time to time you furnished them, did you not? A. Yes sir.

Cross Examination of William A. Tilden,

By Mr. Jaques:

Q. How long do you say you have been president of the Tilden Produce Company?

A. Well, the Tilden Produce Company is an outcome of the Minnesota Butter & Cheese Company. I think I have been president ever since it was the Tilden Produce Company, which is about twelve years, as I remember it,—eleven or twelve years. The name was changed.

Q. Formerly it was known as what?
A. As the Minnesota Butter & Cheese Company.

Q. You are not a practical butter maker, or go into the detail of the business?—You don't go into the detail of the business of manufacture? A. No sir.

Q. Just an executive officer? A. Yes sir.

Q. I understood you to testify that you never heard about this butter seized in August until this letter, Exhibit A, came to you? A. Yes sir, that is my recollection of it.

24 Q. Didn't the Company notify you before that?
A. I don't think they did. This happened about two and a half years ago. They might have notified me. I wouldn't want to testify personally as to that.

Q. I suppose your records would show? A. I presume so.

Q. Now Exhibit A notifies you that this butter is held there in Chicago by the internal revenue officers, as being adulterated butter, for the tax, and I notice in here they say—"I would thank you to advise me as to when this particular lot of butter was churned by your company", "how many churnings it represents, and furnish this office with any statement you may desire showing cause, if any you have, why the tax should not be asserted in this case". Did you ever appear in the matter to show that the tax ought not to be assessed against the butter? A. You mean in Chicago?

Q. Yes, or send in any statement?
A. The letter there to that effect.

Q. That is, Exhibit B? A. I believe it is.

Q. Well, the next day you wrote Exhibit B to Mr. Nut, the supervising agent of Internal Revenue there at Chicago?
A. Yes sir.

Q. And there you ask that it might be deferred so you could go over your records carefully, that "we feel sure we will be able to satisfy you that our butter should not be [taxes]". Did you ever follow that up? A. Yes sir.

Q. With the information? A. Yes sir.

Q. What information did you send him?
A. The object in asking him to defer that was so that we could look over the records and find out whether he had made a mistake, or whether there was anything of that sort

happened or not. I think the letter is written the day following. The very next day, yes sir.

25 Q. Did you ever put in your claim in the matter, or give the information to Mr. Nut in regard to this butter, when it was manufactured, when it was churned, how many churnings, and so forth?

A. I don't know as we did give him that information, the date it was churned, or the number of churnings. In fact, I would judge it would be immaterial to him whether we made more or less churnings.

Q. But you put your claim in with him, the reasons why it should not be taxed as adulterated butter?

A. You have the letter there.

Q. Which letter is that? A. I think it is Exhibit 3 there.

Q. Exhibit C, you mean? A. Yes sir.

Q. Is that the letter, Exhibit D?

A. We state in this letter that our records show that [that] butter to be well within the requirements of the law.

Q. And that is the only statement that you have made in answer to this notice that you had an opportunity——

A. So far as I recollect it is.

Q. To make your claim? A. Yes sir.

Q. You didn't forward any data to Mr. Nut in regard to the butter or its manufacture? A. Not that I recollect of.

Q. You were requested by the letter to furnish that office with any statement you may desire, showing cause, if any you have, why the tax should not be asserted in that case, and all that you ever sent, or evidence you produced there as to the butter is this Exhibit D, which you have just had. Is that right? A. I think it is, as I recollect it.

Q. But Exhibit D, come to notice now, is addressed to Mr. Lynch, not to Mr. Nut. What I wanted to find out, Mr. Tilden, was whether you forwarded to Mr. Nut or the Internal Revenue officers that had this matter in hand, any proofs or any showing why it ought not to be taxed as

26 adulterated butter. You did say to Mr. Lynch you thought it was well within the law, and so forth. But that was a later period? A. Yes sir, that is a later period.

Q. You never sent anything to Mr. Nutt except you wanted a little time, and that was not followed up by any

proof before the Supervising Revenue Agent there in Chicago in regard to this?

A. I don't recollect whether it was or not. I am inclined to think it was not.

Q. So you took [not] no advantage of this opportunity for hearing before the officers before this was completed?

A. I didn't go down to Chicago and have an interview with him? [A.] No.

Q. You took no steps to send anything by mail, or have anyone in Chicago go before the taxing officer and make proofs in regard to the quality of the butter and the reasons why it ought not to be taxed? A. No, I don't think so.

Recess to 2 o'clock p. m., June 20, 1921.

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Proceedings of June 20th, 1921. Afternoon Session.

WILLIAM A. TILDEN called for further Cross-Examination.

By Mr. Jaques:

Q. Now, I wanted to ask you, Mr. Tilden, how closely were you connected with this butter-making, as an employe dealing with the men?

A. I was not very closely connected. I just had a general superintendence. I would walk around through the creamery maybe two or three times a day, tasted the butter, see what kind of a butter they were turning out, that sort of thing.

Q. You had to do with the general policy of the creamery, I suppose? A. Yes sir.

27 Q. And I suppose you were familiar with the trade in butter,—condition of markets? A. Reasonably so.

Mr. Peterson: That is objected to as improper cross-examination, "condition of markets".

The Court: How is that material?

Mr. Peterson: We will call men that made this butter. I didn't intend to call Mr. Tilden as a buttermaker, but the details of the particular making of the butter that is involved in the case—merely general, what his business was, what his instructions to his superintendent were. I think the question of the market conditions is immaterial under the present state of the record.

The Court: How is that material?

Mr. Jaques: I don't know as it is cross-examination.

By Mr. Jaques:

Q. Did you have knowledge of the moisture content of water, amount of water in butter?

Mr. Peterson: Objected to as improper cross-examination. He has not qualified as an expert.

The Court: He may state that.

Mr. Peterson: Exception.

The Witness: A. Why, in a general way I did. The buttermaker had instructions to always have his butter within the requirements of the law, the same as other instructions in the creamery—were to see that the cream was weighed correctly—tested correctly—all those—were general instructions. They knew that right along.

Q. What do you mean by "within the law"?

Mr. Peterson: Objected to as calling for a question of law.

The Court: He may state what instructions were given, if he knows.

28 Mr. Jaques: Withdrawn.

By Mr. Jaques:

Q. Did you instruct the buttermakers?

A. Why, I did to a certain extent, yes sir.

Q. And did you instruct them as to what the content, moisture content of the butter that they should manufacture?

A. Just what do you mean?—tell them how much moisture there should be in the butter?

Q. Yes.

[A.] No, I never told them that, but I told them to keep it well within the law as we understood it.

Q. That is 16, wasn't it? A. 16 per cent, yes sir.

Q. What if anything did you tell them how close they should get to the 16 per cent moisture?

Mr. Peterson: Objected to as immaterial, on the state of record. Counsel has asked him what the instruction was. He has answered within the law and within 16 per cent.

The Court: He may state if he gave any instructions.

The Witness: A. I didn't give any other than what I have just stated.

By Mr. Jaques:

Q. Do you know the time of the year that those churnings were made of this butter?

Mr. Peterson: We have the record. I will bring it in with the next witness, the parties that made the butter, the dates, and all the details.

(Witness excused).

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29 WALTER B. FADDEN sworn to testify the truth, the whole truth, and nothing but the truth, testified as follows on behalf of plaintiff,

Examination in Chief,

By Mr. Peterson:

Q. Your name is Walter B. Fadden? A. Yes sir.

Q. Where do you live? A. St. Paul.

Q. And how long have you lived there? A. Since 1908.

Q. Mr. Fadden, what is your business at the present time?
A. Superintendent of the Tilden Produce Company.

Q. And how long have you been superintendent of the Tilden Produce Company, which company brings this action?
A. Eight years last May.

Q. And during that time [that] you have been continuously employed as superintendent here in St. Paul?
A. Yes sir.

Q. What are your duties as superintendent?
A. Why, to look after the creamery in a general way.

Q. Including the manufacture of butter?
A. Including the manufacture of butter.

Q. And previous to your being superintendent for this period of eight years, what was your business?
A. Four years previous to that I was buying butter for a butter house.

Q. What experience have you had in the trade of butter-making, or in connection with the manufacture of butter, other than as you have testified in the answers you have given?

A. I learned the trade of butter making years ago, afterward as a practical butter-maker before this period referred to.

Q. During what period of time did you act as a butter-maker in the actual making of butter as a butter-maker?

A. I think, as I remember, it, was 1896 to 1904.

Q. And for what creameries were you employed as a butter-maker?

A. The first creamery was at New Ulm, Minnesota.

30 Q. What other ones?

A. And Plato, Minnesota. I was butter-maker for myself; had a creamery of my own.

Q. When was the butter manufactured, Mr. Fadden, by the Tilden Produce Company which was comprehended with the consignment within the Soo car that is referred to in the letter which the Tilden Produce Company received from Mr. Nut, the agent at Chicago, on November 19, 1918?

A. This car of butter was made from August 18, I think it was, to September 19 or 20, about that day.

Q. 1918? A. 1918.

Q. And have you examined into your record, and do you know how many churnings are represented by the consignment of 350 tubs of butter in the Soo car in question referred to in Mr. Nut's letter?

A. That comprised practically all of 26 churnings.

Q. And this consignment of butter that was involved and went forward in this car was print butter or tub butter?

A. Tub butter.

Q. And the total of 26 churnings of the car in question was how many tubs? A. 350 tubs.

Q. And each tub weighed substantially? A. 62 lbs. net.

Q. And, at 60 lbs., 350 tubs would be 21,000 lbs. of butter?

A. Practically.

Q. And these were consigned to the Cold Storage Company,—some cold storage company, in Chicago, Illinois?

A. In Chicago.

Q. And was this notification of November 19 and subsequent to that 156 tubs of butter were returned, were they?
A. Were returned, yes sir.

Q. Now, Mr. Fadden, will you describe to the court and the jury the method of conducting the business at the Tilden Produce Company in August and September in connection with the collection and the preparation of the cream and the [manufactur] of the butter that is involved here?
A. Do I get your idea thoroughly?—be from the time the cream is received until it was made into butter?

31 Q. Yes sir, how it is received, how it comes to the creamery, what is done with it, and the details of the manufacture of the butter that is comprehended in the 350 tubs that went into the Soo car?

A. We receive our cream direct from the farmers, five, eight and ten-gallon cans; every can weighed; received cream, tested it, farmers get their returns according to what the test shows; the cream is pumped into cream rectors, and the butter milk cools down to a certain churning temperature, such as is necessary for the time of the year that the butter is being made, and then it is pumped into the churns, when he gets the proper temperature, and churned into butter.—The butter—after churned, the butter milk is drained off and the water poured into the butter to wash out what remained, to get a clear brine, and the butter after is salted and worked. And, this particular time of the year, we were not making but a few churnings, and made in prints. What excess butter we had more than we were using for the trade was made into unsalted butter, packed into tubs, 62 lbs. to the tub, and we got 350 tubs ahead, shipped to Chicago, until the market was such we could dispose of it. This butter referred to, as I understand the government inspected it at this cold storage, as I believe they do other butters, and they found 156 tubs of that butter, according to their testimony was higher than the government allows for moisture. This butter was returned to us, reworked under the supervisions of deputy collectors, from Mr. Lynch's office.

Q. At about what temperature would the cream be churned, covering these twenty-six churnings involved in the 350 tubs, in the months of August and September?
A. I couldn't say exactly that period. Temperatures vary with the seasons, and the conditions of the various seasons.

Q. And it is a matter of proper adjustment at that time?
A. It is a matter of adjustment of the butter-maker mak-

ing the butter, as to what temperature he has to use,
32 in order to expel the proper amount of water from his butter in working.

Q. And, speaking generally, is the making of butter a process of eliminating the moisture and separating the butter-fat?

Mr. Jaques: That would be a matter of opinion.

The Witness: Yes sir, it is.

By Mr. Peterson:

Q. And what is the time for the churning?

A. Well, that would vary to a certain extent with the seasons of the year, vary anywhere, you might say, from 25 to 30 minutes.

Q. And when the butter is churned, will you describe what the next process is, after the butter-fat appears?

A. After the butter is churned and gathered in large chunks, start to drain the water off without wastage of butter; the water is added, wash-water. That is necessary to wash the remaining butter milk that might stay in the butter, wouldn't drain away without washing, and drain this wash-water off before it is salted and worked into finished product.

Q. Is that wash water a necessary and ordinary process in the manufacture of butter?

A. Yes sir, that is the general practice.

Q. About how much water is used in washing out this butter milk after the butter fat is separated, and after the churning has reached that stage, in comparison with the original cream content put into the churn?

A. That would vary in the judgment of the butter-maker, —might run anywhere from an equal amount of water to what they drawed off in butter milk—might not use within two thirds as much.

Q. And that was the practice that was in vogue in the creamery was it? A. Yes sir.

Q. Now, the buttermilk is first drained off before the washing process, is it not? A. Yes sir.

Q. And then the washing process, that becomes waste
33 and runs into the sewer, does it? A. Yes sir.

Q. Now, you heard Mr. Tilden's testimony as to his general instructions in regard to the moisture content?

A. Yes sir.

Q. And his testimony was true, was it? A. Yes sir.

Q. For purposes of determining the water content, do you have a moisture test in the process of the manufacture of butter? A. Yes sir.

Q. Including—and when you are talking generally, you are also talking particularly in regard to the butter in the 350 tubs involved here, are you not? A. Yes sir.

Q. Will you tell what that moisture content test is?
A. If I understand you to mean what it should be?

Q. What is the test you make?
A. Why, we hold butter moisture in the churn below 16 per cent.

Q. My question has reference to the manner in which the test is made, and at what stage of the proceedings?
A. Why, after the wash water is drawn off from the butter, salt is added; the butter-maker works his butter until he thinks practically finished. He saves a sample from the churn, gives it to the girl that churns—that is making the moisture test. She tests this butter for moisture; gives him a report on it. If it tests too high, he has to re-work—run his churn a little longer and eliminate a little more moisture. He then gives her another sample, and if he has worked it out to the required amount, the butter is drawn from the churn and packed in packets such as they want, either tubs or boxes.

Q. So, in case the moisture content, according to the test, is 16.4, it is reworked and retested, is it? A. Yes sir.

Q. Mr. Fadden, you have a book in your hand, and I will ask you if in the office of the Tilden Produce Company you have, and preserve the moisture content tests, churn
34 tests, as they are called, which are made as you have described in the process of manufacture of butter?
A. We have. I have a book here that was kept for that particular year, on account of this car being in question. As a rule don't keep these records only from year to year. That was kept.

Q. Have you the records covering the 26 churnings that are involved in the 350 tubs of butter that went out in the Soo car? A. I have.

Q. At this time you were making prints, as you have testified, and then the overrun was made into tub butter?

A. What butter we had more than we needed for print trade, was packed into tub butter, as unsalted butter.

Q. And you have a system of marking, have you not, which designates the particular churning? A. Yes sir.

Q. And you have examined your record, have you, and located the churnings that are in the 350 tubs of butter that went out in the Soo car? A. Yes sir.

Q. And as a general classification given to that of Lot Number—what letter?
A. This was serial F. In other words all the 350 tubs of butter are in the churning known as serial letter F.

Q. And you have a sub-number, have you, in addition to the serial letter F?
A. Yes, sir. Every number represents a churning.

Q. And what are the numbers that are comprehended within the serial F, within what limits? A. From 10 to 999

Q. Now, will you turn to Lot No. F in the record book which you have in your hand, covering churn No. 166. Do you find it? A. Yes sir.

Q. What is the date of that churning?
A. September 18th—August 18th.

Q. August 18th, 1918? A. Yes sir.

Q. How many tubs in that churning? A. 17 tubs.

Q. And the record which you have is an original record in your office? A. Yes sir.

35 Q. Kept in the regular course of business?
A. Yes sir, regular form.

Q. And made in the regular course of business? A. Yes sir.

Q. Showing the serial churning and the number of tubs and the churn number and the moisture test? A. Yes sir.

Q. And what each churning—and the package each churn was packed in? A. The kind of package.

Q. Now, and similarly, have you the serial number and the churn number of tubs and moisture content covering each one of the 26 churnings? A. Yes sir.

Q. The record which you have in your hand appears in book form. I will ask you if the separate slips that were

kept separately, covering each day's business and each day's churning, and afterwards bound into the book?
A. Yes sir.

Q. Now, Mr. Fadden for my convenience and for everybody's convenience, you made a tabulation did you not, on this piece of paper which I have in my hand, summarizing the data found in the [indivual] slips in the book in your hand?
A. Yes sir, this is a summary of what we shipped, the number of churnings, and the number of tubs in each churning, shipped in that car.

Q. And with the moisture test upon the paper?
A. Yes sir, I have tests.

Q. I have handed that to the District Attorney for his convenience, so he will follow me in the questions that I ask you. Now, the next churning record in accordance with the summarized list that you have given me, is Lot No. F.—They are all Serial No. F, involved in 350 tubs. The next one is No. 172. I will ask you to find that, please.

The Witness: A. 13 tubs.

Q. What is your moisture test on that? A. 15.8.

Q. Mr. Fadden, I will ask you, from an inspection of the slip which you have in your hand, with the 15.8, which
36 means fifteen and eight-tenths moisture?
A. Fifteen and eight-tenths moisture.

Q. I will ask you if that is the first and only moisture content test, or is that the second one? A. First.

Q. I will call your attention to the next one, 219, and ask you to examine that? A. 15 tubs.

Q. What is your moisture content? A. 15.4.

Q. Is that a first or second?
A. That is a second. The first one is 16 per cent.

Q. And, as I understand your testimony your 15.4 moisture content is obtained after working the butter a little more? A. After working the butter a little more.

Q. In other words, after working, after eliminating some more moisture and taking another test? A. Yes sir.

Q. And what is the name of the employe that made these moisture tests at that time?
A. Her present name is Mrs. Shipple.

Q. She is in court, is she not? A. Yes sir.

Q. That is in her handwriting, is it not? A. Yes sir.

Q. And your next Lot Number,—same Letter, F.—232. Will you turn to that, please. A. 14 tubs in that churning.

Q. What is your moisture test? A. 15.9.

Q. Is that the second one [of] the first? A. The first one.

Q. And churn No. 343, look at your moisture content?
A. 15.9,—15 tubs.

Q. Second moisture test, or first? A. First.

Q. No. 244? A. 15.3, 13 tubs.

Q. Second test? A. First test.

Q. And churn No. 251? A. That is 15 per cent, 14 tubs.

Q. Second moisture test or first? A. First.

Q. Lot No. 254?
A. 16 per cent on the first test and 15.5 on the second test, 16 tubs.

Q. Lot No. 255,—Churn No. 255?
A. 15.7 per cent first test.

Q. How many tubs? A. 13.

37 Q. Lot number 256?
A. 16 per cent first test, 15.7 second. 11 tubs.

[Q.] Churn No. 266? A. 15.5 per cent first test. 14 tubs.

Q. One test or two? A. One, first test.

Q. Churn No. 267? A. 15.7. 13 tubs.

Q. Second moisture test? A. First.

Q. Churn No. 280. A. 16.1 first test, 15.8 the second.

Q. Churn No. 297? A. 15.6 first test, 14 tubs.

Q. Churn No. 298?
A. 16.2 per cent first test, 16 on second test. 5 tubs.

Q. 16 second test? A. Yes sir.

Q. There was something here about holding the moisture test down to under 16. I will ask you what that fact is about there being a shrinkage in some degree by exposure?
A. I expect the butter maker pulled that, considering he couldn't work that any further without injuring the body of the butter, and there is naturally as a rule a small per cent of shrinkage after the butter is settled it stood a while, and naturally a shrinkage, and he figured that would take care of it.

Q. That is your experience?
A. Yes sir, our experience on retests are handled in that way.

Q. This small per cent,—you mean something appreciable —you don't mean 2 or 3 per cent? A. No sir.

Q. You mean enough to get it under the 16?
A. Might run from one-half of 1 per cent to 5/10th per cent.

Q. If it ran 5/10ths, and was originally 16, that would be 15.95, that is what you mean? A. Yes sir.

Q. You said something about if you worked the moisture there being a second working, you might injure the texture or grain of the butter. What did you mean by that?
A. Overwork butter you break the body, grain of the butter, one of the elements that go into the standard of the butter, important qualities.

38 Q. Flavor and texture and grain are the important things? A. Yes sir.

Q. And churn No. 308, what is your moisture test?
A. 15.4.

Q. Second test, or first? A. First test.

Q. No. 309 is your next churn number, involved in this, 350 tubs. What is your moisture test?
A. 16 first test, 15.7 on second test; 14 tubs.

Q. Well, now, that is a case where your first test was 16?
A. Yes sir.

Q. The one you referred to a moment ago was your second test, of 16? A. Yes sir.

Q. So, with your first test, in accordance with your experience, you might work it some more, without perhaps breaking down the texture? A. Yes sir.

Q. In other words, working it once would save the thing from working it a second time? A. Yes sir.

Q. What is your last one? A. 309.

Q. 353, the next churn number. Will you give us the moisture content according to the test?
A. 16.4—first test 15.9, and the second was——

Q. 15.4 the first test? A. 16.5 the first test.

Q. And 15.9 the second? A. 15.9 the second. 13 tubs.

Q. Churn No. 361? A. 15.2 first test, 12 tubs.

Q. Churn No. 421? A. What number?

Q. Churn number 421? A. 15.7. 14 tubs.

Q. Churn No. 422? A. 15.8 first test. 14 tubs.

Q. Churn No. 424? A. 15.4. 13 tubs.

Q. Churn No. 425?
A. 16.1 on the first test; 15.7 on the second test. 14 tubs.

Q. Churn No. 433? A. 15.9 the first test. 14 tubs.

Q. Churn No. 436?
A. 16.1 first test, 15.6 second test. 14 tubs.

Q. [Chrun] No. 447? A. 15.7 first test. 14 tubs.

39 Q. Does that include all of the 26 involved in the 350?
A. I think that is it.

Q. Is that the entire? A. Yes sir.

Q. A total of 26; does that include the 156 tubs that came back? A. Yes sir.

Q. I will ask you to turn back to Churn No. 160, the first one I gave you, on August 18. I find on the slip here that I have moisture test 16. Is that correct?
A. There was 16.4 on the first test, 16 on the second.

Q. Now I will ask you if working that some more, just as in the case of the other one that was 16, you might impair the quality and texture of the butter, and for that reason it was left that way?
A. It could be done. I expect that was the reason it was left that way.

Q. And the same situation as to the shrinkage of some 100 below 16, would apply there as in the other case? A. Yes sir.

Q. And you gave that reason in answer to the other question? A. Yes sir.

Q. Now, Mr. Fadden, will you tell the jury how this sample is taken from the churn which is used, in order to test the moisture content?

A. The buttermaker in saving his sample, he uses two or three fingers of his hand, and gouges into the churn three or four different [place] the length of the churn, saving a little from each place, so as to get a sample large enough for the girl to emulsify in making her test of moisture.

Q. Well, the idea about that is to get a fair sample as near as you can? A. To get a fair sample as near as you can.

Q. And something that might be called in the nature of a composite sample? A. Yes sir.

Q. About what was the size of these churns?

A. Why, the churn is what is called a thousand-pound churn; figure to churn not over 900 pounds in a churning, vary from 800 to 900, occasionally might run over that or right around it.

Q. What was the kind of churn you used in August and September, 1918? A. Victor.

Q. That was a standard churn generally in use in the manufacture of creamery butter? A. Quite commonly used.

Q. Good churn? A. Yes sir.

Q. In the manufacture of the butter which is involved in this case, did the process and material used by the Tilden Produce Company have the intent and effect of causing the absorption and retention of abnormal quantity of water in the butter? A. Repeat that.

Q. (Question last above asked the witness repeated to him), to which the witness makes answer: A. No sir.

Mr. Jaques: Objected to as incompetent, irrelevant, immaterial, not qualified, no proper foundation laid for the testimony. We better have what the method is.

The Court: (Addressing Mr. Peterson) What do you understand "abnormal" to mean, an abnormal amount—over 16 per cent?

By Mr. Peterson:

Q. Mr. Fadden a moisture is found in milk, is it not, as a natural constitutent? A. Yes sir.

Q. Can you state the percentage about?
A. Why, I think it is something like 95 or [’6] per cent.

Q. Of water? A. Moisture.

Q. Anyway, one of the important constituent elements, natural constituent elements of milk, is water, is it not?
A. Yes sir.

Q. And so with butter-fat, is one of the natural, normal constitutent units water? A. Yes sir.

Q. And about what percentage of water in butter fat?
41 A. An average 60 to 65 per cent,—close to 70.

Q. Are you speaking generally?
A. Speaking generally cream varies according to the amount of butter fat.

Q. And your natural moisture content in cream is about what per cent?
A. That will vary in comparison to the butter-fat content.

Q. About how much? A. I would say 60 to 70 per cent.

Q. Coming down to the butter—coming down to milk in the first place, and cream, and the cream is obtained from the milk, generally speaking, for commercial purposes, by the cream separator? A. Yes sir.

Q. Coming down to the milk and the cream separated from the milk, and your cream churned into butter, and the process carried down just in the usual and normal and ordinary way in the manufacture of butter as was done here—down to the point of the moisture test, of the first moisture test, that is made in the process of churning; I will ask you within what ranges your moisture content runs for purposes of moisture,—the query of the Court as to what might be called a normal content—normal water content of cream or butter fat; within what ranges will your moisture test run? A. In the butter?

Q. Yes.

Mr. Jaques: I suppose you mean normally manufactured?

Mr. Peterson: There is no abnormal manufacture here.

By the Court:
Q. After the churning is made the water and the buttermilk is [dran] off? A. Yes sir.

Q. That leaves the curd? A. Yes sir.

Q. And then you add water for the purpose of washing? A. Yes sir.

Q. Before you add the water, what percentage of water is already in that butter, after the milk is [dran] off?

A. I don't know that I ever made a test in regard to that; I should judge anywhere from 15 to 25 per cent.

42 Q. Is there more water in the butter milk after the butter milk is [dran] off, and before you can add washing water, than there is after you add the wash water and [was] the butter and draw the wash water off?

A. I wouldn't judge be much difference; as a matter of fact, I never made a test of that to my knowledge.

By Mr. Peterson:

Q. I will ask the question over again: What is your normal content, or range, of moisture in butter, in accordance with your experience and in accordance with the test which you have made?

A. Our churning varies from 15 to 16; might vary from 14 to 18, I should judge.

Q. Well, you have commonly found in your experience as a butter maker water content up to 18? A. Yes sir.

Q. Would you say that the normal content was 14 to 18?

A. I would say 14 to 18 would be a reasonable normal content.

Q. And over 18 abnormal? A. I think it would be.

Q. Now the Court has asked a query there I think we ought to clear up a little bit, and that is as to the washing of the butter after the granules of butter fat appear—your butter milk is drawn off?

A. Your butter milk is a great deal of water.

Q. Your butter milk is a great deal of water? A. Yes sir.

Q. Butter milk is drawn off and preserved? A. Yes sir.

Q. That is not drained to the sour? A. No sir.

Q. Then you wash it? A. Yes sir.

Q. Is washing a necessary process in the manufacture of good butter? A. Yes sir.

Q. And is the use of the water that you described—two-thirds—to an amount equal to your original cream content, put in the churn, is that a necessary process in the manufacture of butter? A. [Is] is, to make good butter.

43 Q. And is it to wash away the [casine] and the particles of butter milk that otherwise might affect the keeping-quality of the butter?

A. You would wash off any abnormal amount of [casine] that might be retained in the butter and what butter milk naturally stays there—butter milk being a sour nature, if it is held in the butter, causing milky butter, gives you a sour flavor butter.

Q. This washing of butter with water at that stage in the manufacture of butter is a common, customary, universal practice, is it not? A. Yes sir.

Q. In your creamery and in everybody's creamery?
A. Everybody's.

Q. All the butter you ever made was a wash, was it not?
A. Yes sir.

Q. Now, it is not the purpose of the washing, is it, to add a material in the manufacture, or to use a material in the manufacture of the butter, with intent or effect to cause the absorption of abnormal quantities of water? A. No sir.

Q. Or to cause the absorption of abnormal quantities of milk or cream? A. No sir.

Q. And then washing the butter at that stage, in the manufacture, is not to incorporate abnormal quantities of water in the butter? A. No sir.

Q. And, so far as you know, is the water content of the butter affected one way or the other by the washing process as it is carried on in that way?

A. I don't know as I get your question.

Q. As far as your experience goes, is the water content, the moisture content of butter increased or affected in any way by the washing of the butter in the process of manufacture to get out the extra [casine]?

A. I don't think it would.

Q. It is not the effect of it, and it is not the intent of it?
A. No sir.

44 Q. Now, I will ask the question over again, Mr. Fadden, in the manufacture of the butter which is involved in this case, and in the process and material which was used, was there any intent to cause the absorption and retention of abnormal quantities of water in the butter?

A. No sir.

Q. And in the manufacture and manipulation of the butter which is involved in this case, did the process and material that was used have the effect of causing the absorption and retention of abnormal quantities of water in the butter?

A. No sir.

Q. And in the manufacture of the butter which is involved in this case, did the process and material used in the Tilden Produce Company have the intent and effect of causing the absorption and retention of abnormal quantities of water, milk and cream, in the butter? A. No sir.

Cross Examination of Walter B. Fadden,

By Mr. Jaques:

Q. Mr. Fadden, I show you Defendant's Exhibit 1. Now, could you mark on that exhibit 1 the page of that book indicating the result here.—You have been reading from a book, and we have not access——

Mr. Peterson: I intended, before offering it, to put on the witness stand the party that made the moisture content. But it may be considered in evidence, Mr. Jaques, if you want it.

By Mr. Jaques:

Q. I am asking you whether by going over the book and taking in this—put on this Defendant's Exhibit 1 the
45 page where the item appears, if it is on the list.

A. Give you the dates of each page.

Q. Commence the 18th of August.

A. September 18, I think it was—or August.

Q. And went how far?

A. September 19th or 20th.—From August 18th to September 19th, inclusive.

Mr. Peterson: We will offer now the book, which is an official record in the office of the Tilden Produce Company, in so far as the same covers the 350 tubs of butter referred to in the testimony of Mr. Fadden, and summarized in the sheet Defendant's Exhibit 1, and we will check with the

letter P each one of the records in the book which he has in his hand.

By Mr. Jaques:
Q. Give us the date of the first item, 160?
A. August 18, 1918.

Q. 172? A. 172 is August 20.

The Court: Do you want this done right away?

Mr. Jaques: Not necessarily.

The Court: Is it necessary to have it before you cross-examine?

Mr. Jaques: I don't think so. I was going to make an exhibit——

The Court: You may do that at recess.

Mr. Jaques: Offer Exhibit 1 in evidence.

(No objection).

The Court: Received.

By Mr. Jaques:
Q. You are a butter maker, Mr. Fadden?
A. I have been, yes sir.

Q. And where was you trained in the butter-making?
A. I started at New Auburn, Minnesota.

46 Q. How long ago was that? A. 1906—1896.

Q. In those days the butter-makers were not so commonly trained at agricultural schools, and so forth?
A. No sir.

Q. You just learned it in a practical way?
A. Practical way, yes sir.

Q. Did you commence making butter in 1896?
A. That was the year I was learning.

Q. When did you commence as a butter-maker? A. '97.

Q. And how long did you work as a butter-maker?
A. Until 1904.

Q. 1897 commenced to make butter and were at that until 1904? A. Yes sir.

Q. Are you familiar with the tests of butter, for water content at that time, say 1896? A. No sir.

Q. Did you make any tests at that time when you were making butter? A. Not at that time.

Q. When did you commence?
A. Why, I never made them myself, at all.

Q. Never made them yourself? A. No sir.

Q. Well, have you seen the tests made by others along in those years, 1896 to 1900? A. What was that?

Q. Did you see tests of butter for water content that was made during those years, 1897 to 1900?
A. 1897 to 1900, no sir.

Q. And you didn't follow the statistics of the subject of the water content or average water content of butter during those years? A. No sir, I didn't.

Q. You made an addition to your answer, do you know what it was?
A. Why, it was not done in a practical way at that time.

Q. That is, it was not tested in a practical way?
A. No sir.

Q. Do you mean to say that they were not testing butter for water content and for other purposes, between 1897
47 and 1904?
A. I don't think it was a general practice among small creameries at that time? [A.] No sir.

Q. Now you are testifying, Mr. Fadden, as an expert on this question of water content of butter—butter-making. Haven't you followed it, what I might say, the scientific development of the question, in fixing water content, finding the amount of water in butter? A. Since that time I have.

Q. Since 1897? A. Yes sir—since 1904, later years.

Q. After you got through making butter, then you commenced to find out about this question of water content of butter? A. The requirements and so on.

Q. Well, Mr. Fadden, do you want us to understand that you don't know what the statistics of the subject and the tests that were put into effect during those years indicated as the average or normal content of butter, of moisture, water?

A. It hasn't been so many years that they have had a practical method of making that test.

Q. Well, the agricultural department had made many tests, of great varieties of butter as to moisture content, hadn't they, between 1897 and 1904?

Mr. Peterson: Object to tests the government agricultural department may have made between 1897 and 1904.

The Witness: I knew of those tests being made, but not in a practical way, in a general way, through small creameries.

Q. I am talking about butter-making the world over, so far as that is concerned.

A. All right. I didn't know that they had it the world over.

Q. You didn't follow the statistics over?

A. Not to any extent, no sir.

Q. And you haven't kept up with the different works on this matter of manufacturing butter, water content,
48 and so forth, during these years since you became a butter-maker? A. Recent years.

Q. Do you know what the—according to the concensus of butter-experts, is a normal quantity of water in the manufacture of butter, creamery butter?

Mr. Peterson: Objected to as improper cross-examination, no foundation laid for the particular question,—the question referring to some concensus of opinion of certain experts. He has not qualified as a technical man.

The Court: He may state whether he knows.

The Witness: I will state that would depend upon the man largely passing the judgment.

By Mr. Jaques:

Q. Have you ever seen or examined Circular No. 39 of the Agricultural Department, Alford, on this question of tests of water content of butter in normal manufacture throughout the country?

Mr. Peterson: Objected to as immaterial.

The Court: He may state if he has any knowledge of it.

The Witness: I wouldn't say.

Mr. Peterson: Answer the question "Yes" or "No".

The Witness: Yes, I know of it.

By Mr. Jaques:

Q. Well, do you know that that circular contains statistics of 730 different packages of butter, from over 400 different creameries, 18 different states, and that it showed an average water content of 11.78?

Mr. Peterson: Objected to, no foundation laid for the question, immaterial on the state of the record.

The Court: He may answer that.

49 The Witness: I have heard of the circular, but I have never read it, and I don't know that I remember the exact content claimed.

By Mr. Jaques:

Q. Do you remember about what those tests showed in the circular?

A. As near as I remember it now, it is quite a while ago, running from 12 to 13 per cent.

Q. Did it run from 13—9 to 13 per cent?

A. I am not clear on that.

Q. Has your attention ever been called to, or have you examined Bureau of Animal Industry No. 149, Thompson, Norton, Shaw, having made the tests,—do you remember that bulletin?

A. I have read various articles, but I don't attach them to that particular——

Q. And you have examined that, have you, that bulletin, 149? A. I wouldn't say so.

Q. Commonly called Thompson's Bulletin?

A. I don't think I have.

Q. And do you remember, can you tell us, what the average water content was, as shown by that bulletin, do you know that, out of 695 samples—488 creameries, and 14 states? A. No sir.

Q. Don't you know, Mr. Fadden, as a matter of fact, that in those days, before regulation fixing 16 per cent as the

maximum, that you butter makers were making butter right along, 13 per cent—9 to 14 per cent water content?

A. No sir.

Q. You don't know that? A. No sir.

Q. You didn't follow the literature of the subject of your business of butter-making at all, then,—you are on here as an expert to tell us about butter. I want to know if you followed—kept informed as to the business of creamery butter-making? A. I have to a certain extent, yes sir.

Q. But to a limited extent, I should think, from the
50 questions I have asked. Can you tell us what would be the natural, or normal, content of butter made under ordinary conditions, in a natural and normal way, with the object and purpose of making butter, for quality, would be about, how it would run?

A. From my experience, from tests we have made in our creamery, would run, I should judge, from 14 to 18 per cent, without any particular efforts, one way or the other.

Q. 14 to 18 per cent. That is the per cent you make it.

Mr. Peterson: He has answered it twice.

By Mr. Jaques:

Q. Do you claim that it is possible to make butter with 16 per cent moisture, under normal and proper conditions, without using some process whereby the butter fat will be made to absorb an abnormal amount of water? A. Yes sir.

Q. Do you know when the law was passed? You know when the law was passed, this 1902, June I think—May?

A. Yes sir.

Q. And you know as a matter of fact that this regulation permitting a maximum of 16 per cent moisture in butter was adopted almost immediately after that law was passed, don't you, or do you? A. Yes sir.

Q. Well, now, you also know, don't you, Mr. Fadden,—I am going to be perfectly frank with you,—you also know that from the time that rule was passed, butter-makers have been struggling to put as much water as possible into butter, but not to exceed 16 per cent?

Mr. Peterson: Objected to as immaterial on the state of the record, and no proper cross-examination; and it appear-

ing that the butter in question was normally and regularly made, and that no process or material was used with intent or effect to cause the absorption or abnormal quantity
51 of water, therefore it is immaterial what certain butter-makers might do.

The Court: Sustained.

Mr. Jaques: Wouldn't it be proper to assume the custom of the period?

The Court: I don't know that it makes any difference what the custom has been.

By Mr. Jaques:

Q. Now, referring to Exhibit 1, I notice the first one on the list F 16, August 18, 17 tubs of butter in a churning, 16 per cent water. Was not any process used to get that 16 per cent water in that butter? A. Nothing out of the ordinary.

Q. How is that? A. Nothing out of the ordinary.

Q. By "the ordinary" you mean the way that creameries are manufacturing butter now, or when you began to make butter in creameries in the early days?

A. It is made just the same as the other churnings were.

Q. During that year? A. In that car.

Q. I notice by this paper Exhibit 1 the first churning was 16 per cent water, second churning 15.8 per cent, third churning 15.4 water, and the next was 15.9 per cent water; the next churning 15.9 per cent water, 15.3 water, and one here 15 per cent water, another 15.5, the next 15, the next 15.7 water, the next 15.7 water, next 15.5, 15.7, 15.8, 15.6 water, and next 16 per cent water, and 15.4 per cent water, and 15.7 water, and 15.9 per cent water, 15.2 per cent water, 15.7 water, 15.8 water, 15.4 per cent water, 15.7 water, 15.9 water, 15.8 per cent water, 15.7. Now can you tell us how you were able to keep the water content of your butter right along on the average of 16 per cent.

Mr. Peterson: Objected to as immaterial on the state of the record.

52 Mr. Jaques: If he knows how.

The Court: He may answer that.

The Witness: A. Why, they washed, when they washed their butter, they work it down to a certain test where the

butter-maker saves his sample for a test finds it 16 or above, takes a new test, new sample, and reworks it—down below 16 per cent; if it shows below 16 per cent on his first test he doesn't rework it any more.

Q. Well, isn't it a fact that you butter-makers in these modern days can control the water content in butter?
A. Not to an exact point, no sir.

Q. Not to an exact point? A. No sir.

Q. Now, does this [factor] furnish very much butter for the United States navy?

Mr. Peterson: Objected to as immaterial, the Navy butter being made upon the specifications of a certain contract.

The Court: Sustained on the ground it is immaterial.

By Mr. Jaques:
Q. When you test that butter after the churning, and find that it exceeds 16 per cent water, you then try to rework it and bring it below 16 per cent, don't you? A. Yes sir.

Q. Supposing it shows up with 14 per cent water, or 13 per cent water, what would you do then?
A. We would naturally pull it from the churn and pack it.

Q. Put it up for the marker? A. Yes sir.

Q. You wouldn't add any water to that? A. Never have.

Q. I have been quite a little astonished at the regularity at which this line of moisture content travels along the 16 per cent. You don't try, do you, by any possibility, you don't try to get just as near 16 per cent without getting over, as you possibly can, so as to sell more water for butter,
53 that is not possible, is it?
A. Naturally wouldn't want to get—you wouldn't want to reduce it, to get out of proportion on it—you would naturally want to get as near 16 per cent as possible to what the law requires.

The Court: You understand the law to require 16 per cent?

The Witness: A. No, below.

The Court: There is no minimum, is there?

The Witness: A. No sir.

The Court: Why do you want to get it as near 16 per cent as you can?

The Witness: Why, it is natural to get—I should say it was natural to work up—not to work out any more moisture than was necessary, according to the law, according to the requirements.

By Mr. Jaques:

Q. Is there any law that requires you to get it up——

A. Below 16.

Q. Is there any law that requires you to run it up to 16 per cent?

Mr. Peterson: If you don't understand the question you can ask what it was, and have it read to you.

The Witness: I didn't understand the question.

By Mr. Jaques:

Q. (Question last above asked the witness repeated to him by the reporter, to which question Counsel adds) —water?

A. No, sir.

Q. Then there is no reason for you people to chase this 16 per cent water point so closely, is there?

A. Why, I don't know just how much of a point is——

Q. I think you have answered. It is what I wanted. Just drop that for a moment. When is your first test taken on the butter you are manufacturing?

A. By the butter-makers,—thinks he has it worked to
54 the proper point; he saves his sample, gives it to the girl for test.

Q. Is that before or after the butter is washed? A. After.

Q. After the butter is washed. No test before? A. No sir.

Q. What, can you explain to us, what your test was there?

A. I don't get your point.

Q. What your test was as to water in the creamery, how you took it, how you manipulate it, how you found out how much water it contains?

A. The butter-maker saves his sample from the churn—takes his hand, saves two or three samples, three or four samples, from the churn, puts it into a glass, gives this glass

to the girl to make his moisture test. She emulsifies the sample, weighs out a 10-grain sample, evaporates the moisture, weighs back the sample, and her scale shows the percentage of evaporation—the moisture, which would be the percent of moisture in the test. If too high gives the sample to the butter-maker; if too high leaves the door of his churn open, to work out a little more moisture, to get it below the 16 per cent required by law.

Q. Is that girl a chemist? A. Not a practical chemist.

Q. What is the name of that method of testing moisture in butter you have called?
A. It is the Eastern moisture test used.

Q. Do you consider that an accurate moisture test of moisture in butter?
A. It is the test that is being used very generally by every body.

Q. What I wanted to know, whether you considered it to constitute an accurate test of moisture in butter?
A. Practically so.

Q. When it is performed by one who is not an expert, or chemist? A. Yes sir.

Q. How close will that test bring—how near to accurate, will that test be? Can you bring it right out definitely—accurate?
55
A. Why, it would not vary, I don't think, within a half of one per cent.

Q. It would not—couldn't get it closer than one-half of 1 per cent, you don't think, by that test?
A. It could be exact, I think.

Q. You think it would vary that much?
A. It could vary a little, and could be accurate.

Q. It could vary one-half of one per cent?
A. I think any method will vary, that is known to the trade.

Q. Now, in the process of washing the butter, did not some of the wash water take the place of the water originally in the cream? A. Naturally.

Q. Then would it be possible that in the process of washing to have the butter fat absorb more moisture and incorporate more moisture?

Mr. Peterson: On the state of the record, washing would be the universal process, and all the government men will say so, in the process of the manufacture of butter and washing butter, the ordinary washing of butter of the butter fat in the process of manufacture; and it appearing on the face of the record is not intended to incorporate abnormal quantities of moisture.

The Court: Might not have intended to, but might have the effect of it. He may answer that.

The Witness: I don't think it would—abnormal quantity, no sir.

By Mr. Jaques:

Q. Wouldn't that depend to a great extent on the condition of the butter fat? A. It would to a certain extent.

Q. And this butter fat is an oily substance when it is
56 in granules or globules, whatever you call it?
A. Yes sir.

Q. It is almost impossible for water to penetrate it, isn't it? A. Yes sir.

Q. But butter can be so manufactured that the grain, as they call it, of the butter, in other words, the granules and the globules, might be broken down.

—Q. and defective. If that were the fact, it would then absorb wash water or any other kind of water that was in it in greater extent than in its original state? A. Yes sir.

Q. I think you testified that the making of butter was the process of elimination of moisture or water?

A. In the working, yes sir.

Q. Isn't it more a process of crystallizing the butter fat—separating it and getting it into bunches, getting it to crystalize, but come together in large or small globules, or bunches, so that you can take it out of the water?

A. Churning it, churning process.

Q. And the amount of water that that butter fat can absorb or hold, is quite limited—don't penetrate that oily substance known as the butter fat?

A. That would depend on the condition largely.

Q. Do you remember about these churnings; you were

there working at that time? How were the granules, large or small—did that butter come out?

A. Why, I don't just remember as to that exact condition at that time, but the regular way of making, usually make it to gather it large enough—coarse enough, so that it won't run out of a churn—in butter-milk—too small.

Q. The time of the year that was—in August and September, is it, or is it not a fact, that the formation of the butter fat granules and globules, are more substantial than some other parts of the year?

A. Depend a great deal on weather condition; as a rule they are.

57 Q. Those are the time of the year when butter is substantial and fixed?

A. The weather happens to be hot at that time, has different effect on it too.

Q. What temperature do you run your churns at, at that time of the year, did you aim to have the cream at when it went into the churn?

A. Depends largely on weather conditions—varies—temperatures will vary times of the year anywheres from 48 to 56, 54.

Q. 48 to 54, you say? A. Yes sir.

Q. In the month of August you churn around what? A. 50.

Q. September? A. About the same.

Q. What is the churn—Victor churn?

A. At that time, yes sir.

Q. Is that a combination churn, that churns and works the butter? A. Combination churn and worker.

Q. Now, those tests that you folks took were taken out of the churn, out of the butter after—out of tubs, after the butter had been packed? A. No sir.

Q. That is, it was not taken out of——

A. Taken from the churn.

Q. From the churn? A. Yes sir.

Q. Only? A. Only.

Q. You didn't make any test at all, after it was—supposedly complete, ready for the market, you made no test?

A. No sir, not after it was finished.

Q. Did you make tests after the butter was shipped back to you? A. Yes sir.

Q. Have you got those tests? A. Yes sir.

Mr. Peterson: We can prove that by different witnesses. Objected to as improper cross-examination.

By Mr. Jaques:

Q. What did the average of those tests show, in this
58 butter?

Mr. Peterson: Objected to as improper cross-examination what the test of 156 tubs of butter made by somebody else shows.

The Court: If he has any knowledge of the matter, let him say so, if he has any personal knowledge of it.

Mr. Peterson: Did you make the tests yourself?

The Witness: A. No sir.

Mr. Jaques: Q. You didn't make those other tests, either?

The Witness: A. No sir.

Mr. Peterson: We will put the girl on.

By Mr. Jaques:

Q. You can't tell at what moisture you had the cream, when you made the butter? A. Not exactly.

Q. I mean, at what temperature?

A. Not exactly at that time, no sir.

Q. Don't you keep track of the [tenperature] of the cream—temperature of the wash water it is?

A. Don't keep a record of it, no sir.

Q. I understood you to testify that they churned this butter from 25 to 30 minutes,—I think I have it down. Was that right?

A. I don't time those myself, but that is practically what the variation of temperature runs, might run as high as 35.

Q. Is it the regular course in that creamery? A. Yes sir.

Q. Isn't it a fact that butter churned from 20 to 30 minutes, that the [testure] of the butter would be soft?

A. Not necessarily.

Q. Would it be as substantially well formed as it would be if it was churned 50 to 60 minutes?

Mr. Peterson: Objected to as immaterial, on the state of the record, not tending to prove that any process was used with intent or effect to cause the absorption of abnormal quantities of water.

The Court: He may state what the effect is, if he knows.

59 The Witness: A. I don't think you could churn a lot longer without you had your cream so cold that it wouldn't—foam up too much.

By Mr. Jaques:

Q. Is that the universal practice in the Tilden Creamery, to only churn from 25 to 30 minutes?

A. Might vary a few minutes.

Q. Approximately? A. Approximately that time.

Q. I want to ask you, Mr. Fadden, how much butter the Tilden Produce Company, or this creamery that they run, makes during the year? A. Why, different years vary——

Q. Approximately about?

A. Approximately 2,000,000 pounds.

Q. And the witness this morning testified that they would make 40 (thousand) or 50,000 lbs. a week. Would that be about right?

Mr. Peterson: Objected to as immaterial.

The Witness: A. Just offhand, say about 2,000,000 lbs., a little more or less.

By Mr. Jaques:

Q. You heard the witness testimony about 40 (thousand) or 50,000 lbs. a month, at that particular time,—40 (thousand) or 50,000 lbs. a week?

A. Presume that is what he meant at that time.

Q. What is your knowledge on that subject, how much you were making a week at that time?

A. Why, making just about that, I should judge,—days varied some.

Re-Direct Examination of Walter B. Fadden,

By Mr. Peterson:

Q. 40,000 lbs. a week, 50 weeks to the year? A. Yes sir.

Q. That would be 2,000,000 lbs., wouldn't it.
A. That would be about it.

Q. Just one or two questions in conclusion, Mr. Fad-
60 den. The manufacture of butter is the separation of the butter fat in cream and eliminating the moisture, is it not, generally speaking? A. Yes sir.

Q. And, in the judgment of the butter maker, at a certain time he takes a moisture test? A. Yes sir.

Q. And if over 16 per cent, what do you do?
A. Work more moisture out of it.

Q. Work it some more to get some more moisture out of it?
A. Yes sir.

Q. And after working a while you take the second test, and if under you leave it alone? A. Yes sir.

Q. And that is your process? A. Yes sir.

Q. And that is the way you conduct the business?
A. Yes sir.

Re-Cross Examination of Walter B. Fadden,

By Mr. Jaques:

Q. Under this law, you have to use, a manipulation or process with intent or effect of causing the butter to absorb a greater amount—an abnormal amount of moisture. Now that proposition rests entirely upon the condition of the butter fat, as to the absorption of moisture. Is that right?

Mr. Peterson: I don't understand this question myself. Objected to as immaterial, incompetent under the state of the record, not within the rule of law.

The Court: If the witness understands the question he may answer it.

The Witness: I don't quite understand the question myself.

Mr. Peterson: Do you understand the question?

Mr. Jaques: Withdrawn.

61 By Mr. Jaques:

Q. The amount of water that the butter fat will absorb depends upon the condition of the butter fat, doesn't it?

A. Yes sir.

Mr. Peterson: Objected to as immaterial on the state of the record, and not within the rule of law laid down by the statute.

The Court: He may answer that.

By Mr. Jaques:

Q. And if the butter fat is—(question last above asked the witness repeated to him by the reporter, to which the witness makes response as follows):

A. That would depend largely—You mean the holding of water—the moisture, in the butter depends largely on the condition of the fat?

Q. Yes.

A. If you don't work it you don't work it out; if the moisture is there you have got to work it out.

Q. If you over-work it, the granules are broken down, and then is the time when they will absorb more water?

A. We don't aim to overwork butter.

Q. I am asking you—you are an expert——

A. It would not retain—it might retain the water if it was there, and they over-worked.

Q. That is broken granules or broken down butter, will absorb more water than perfect granules of butter fat?

A. Yes sir.

Q. The water is there when you wash it, isn't it—you apply the water? A. The water is there when you wash it.

Re-direct Examination of Walter B. Fadden,

By Mr. Peterson:

Q. When you wash it the water is drained out?

A. It is drained off.

62 Q. The lids on the churn are left open, the churns are turned and the water runs out? A. Yes sir.

Q. That is what becomes of the water?

A. Yes sir;—the water all drained off before the salt—the salt is added, and it is worked after the salt is added.

Q. And, if you over work, you may break down your texture and break your granules, may you not? A. Yes sir.

Q. This washing process is before that?
A. The washing process is before the working.

Q. And whatever water is there at that time is constituent in [in] the—originally in the milk and cream, is it not?
A. A part of it.

Q. It is an original constituent,—it is not anything that is added to it? A. No sir.

Q. It is not from the outside? A. No sir.

Q. It is not a material added? A. No sir.

Q. If you work it, and break down the grain of your butter, as Counsel suggested in his question, what becomes of your butter? A. Got a weak-grained butter.

Q. It is injured? A. An injured grain.

Q. That affects the [qulity]? A. Yes sir.

Q. Affects the keeping-[qulity], and affects the standard of the butter? A. Affects the [qulity].

Q. And the price? A. Makes a different grade of butter.

Re-Cross Examination of Walter B. Fadden,

By Mr. Jaques:
Q. Causes it to absorb more water——

A. Can't absorb—it is there.

Q. It causes it to acquire more water, if the grain is
63 broken down?
A. Won't, unless the water is there—You can't eliminate—if it is broken down you can't eliminate.

Q. If the water is there when you wash you will—supposing it is a broken-down grain, you wash it?
A. It is not broken down until after you work it.

Q. Can't it be broken down before?
A. We don't make a process—we don't churn butter that way.

The Court:

Q. When you get through churning you draw off the butter milk; what condition is the butter in, one large mass, or molecules? A. Small particles.

Q. How large particles? A. Your finger,—thumb.

Q. That is the condition when you put the water in?
A. Yes sir.

Q. Do you measure the water you put in? A. No sir.

Q. How do you know how much you put in?
A. Why, fill the churn—you might term it measured—fill the churn; it is about an equal amount each time, from the looks of the churn.

Q. But you don't measure it [accorately]? A. Yes sir.

Q. You don't measure it when you take it out?
A. No sir—let all water run out that will, before salting—that will naturally run out after you salt it, go to work and [left] your covers of your churn, force the water out that is retained from the washing.

Re-Direct Examination of Walter B. Fadden,

By Mr. Peterson:

Q. In other words, that water that is added to wash it is drained out, by leaving open the covers of the churn?
A. Leaving open—a certain amount.

Q. When you rework it again after making your first test, you rework it, but not up to the point of breaking down the texture? A. No sir. Aim not to.

64 Q. You work it at least until the moisture content is reduced to below the 16 per cent? A. Yes sir.

(Witness excused).

JOHN BOWER, Being first duly sworn to tell the truth, the whole truth and nothing but the truth, testified as follows on behalf of plaintiff.

Examination in Chief,

By Mr. Peterson:

Mr. Peterson: I am calling this witness out of his order, because he has to get away.

Q. Where do you live?
A. I live on the farm, on Lake St. Croix Dairy Farm.

Q. In Minnesota? A. In Minnesota, Washington County.

Q. You are a farmer at the present time?
A. Yes sir, in the summertime. Winter time lecturer with the Agriculture Division Extension of the University of Minnesota.

Q. I will ask you to state in your own way, and as concisely and expeditiously as you can, generally your experience in the butter-making business, and your education along that line.
A. I am a graduate of the short course in Dairying of the Agriculture College, also the four-year course, a cheese-maker of one season's experience; a butter-maker in a large creamery in Canada, and instructor on the floor of the Iowa State Creamery, and later Assistant Professor, and for a short time, in charge of the Department. Later I was superintendent of the Bates Creamery Company, Lincoln, Nebraska, and later still superintendent—assistant manager of the Crescent Creamery Company, St. Paul, Minnesota.
65 That is my experience. I might just add one thing more; during my stay at Ames, I made a special study of the question of moisture in butter, relative to the keeping-qualities, sending some to England to be scored, and some to storage in New York, to determine whether it had any effect on the quality, whether it had high or low moisture.

Q. You made certain individual experiments, and investigations under your own supervision, in relation to moisture content and the effect of moisture content upon the quality and keeping-quality of butter? A. Yes sir.

Q. Those were the investigations that were referred to by Professor McKay, in his articles on Butter? A. Yes sir.

Q. You have been in court and heard the testimony in this case, have you not, Mr. Bower? A. Yes sir.

Q. And I will ask you what the range of moisture content in butter is?

A. I would say about 90 per cent of the butter made nowadays would range between 14 and 18 per cent. Some may be even lower than that, and be made in a normal way. Some may be higher.

Q. In other words, the normal content, moisture content, of butter may exceed 16 per cent? A. Yes sir.

Q. And your findings are to that effect, are they not?
A. Yes sir.

Q. In your own investigation? A. Yes sir.

Q. And I will ask you this; is the manufacture of butter generally speaking a process of getting together the butter fat and eliminating the moisture, eliminating the moisture content within certain limits, from the butter fat?

A. Combined with the elimination of [casine] in the butter milk and anythings of any kind that it can combine with —yes.

Q. I will ask you to define the manufacture of butter, in your own way—you can do it better than I can ask you.

A. It is the assembling of the cream and taking the course to Pasteurize it to make it safe as food product, and
66 cooling it so that it may be churned; in the churn process the whole process is to get those granules in such condition you can eliminate this butter milk and extra moisture that may be there. The water then—the butter as you see it in the granulated condition might [vay]. No man living can tell by looking at that granule that it is just so—each time there is a little physical condition there that is hard to determine, and there is no method of determining it; may be a little more granular than others, and consequently the butter-maker's judgment, from his physical method, by his eye, is to get that in granular condition, and by using a lot of water in the churn, washing it, and getting rid of that butter milk; after that salt is added and worked, so that the salt is evenly distributed in the butter, and to some extent the water evenly distributed, because water may be held in little pockets you can't see—invisible, and those two factors enter there. Then the butter is taken from the churn, usually sampled—didn't use to be sampled, to see that the ruling—

not the law—of the Internal Revenue office is obeyed—and tested, and if it is high they adopt the process of reworking, to reduce the moisture content, after which it is put in clean tubs and packed, marketed, some other details, such as marking.

Q. And the effort is to eliminate the moisture down to under 16 per cent? A. Yes sir.

Q. And, as far as temperature is concerned and the time of churning in order to get the proper granular condition, that is largely at the judgment of the butter-maker and the superintendent in charge? A. Yes sir.

Q. And before the moisture content tests made?
—A. If anything ought to be higher, reasonable so, because——

Q. When is the moisture content test made?
A. When your butter is made.

67 Q. Before the washing?
A. After it is washed and after it is made.

Q. Is the washing of the butter a customary process?
A. Absolutely so.

Q. And it is usual? A. Yes, has been for a long time.

Q. You know that to be a fact? A. Yes sir.

Q. And what is the purpose of the washing?
A. Assist to eliminate butter milk and prevent any of that butter milk being retained in the butter itself, which of course tends to depreciate its quality.

Q. The leaving of portions of [casine] or portions of butter-milk would tend to deteriorate the quality of butter, the keeping-quality of butter?
A. It would, under general conditions.

Q. And that is the purpose of the washing. Now, for purposes of washing the butter mass, the granular mass and the granules are still left in the churn, are they not? A. Yes sir.

Q. And about what amount of water is poured into the churn, by a hose, is it now? A. Yes sir.

Q. When, having reference to the original cream content in the churn?
A. About the same,—so it will float freely and agitate.

Q. The idea of using about as much water as the original cream content, is to cover the granular mass?
A. Yes sir. It will break it all up, so the butter milk can get away.

Q. So it can be thoroughly washed? A. Yes sir.

Q. It is not the purpose, and it is not the idea, in washing the butter, to use a process and add a material, with intent or effect to cause the butter fat—to cause the butter, to absorb abnormal quantity of moisture is it? A. No sir.

Q. Just one of the steps in the making of good butter?
A. Yes sir.

Q. You heard the testimony of this Mr. Fadden, as to the details and the methods of making the butter that is involved in this case? A. I did.

68 Q. Assuming that testimony to be true, Mr. Bower, I will ask you this; in the manufacture of the butter which is involved in this case and in the process and material that was used, was there any intent to cause the absorption and retention of abnormal quantity of water in the butter?

Mr. Jaques: He doesn't know what the intent was.

Mr. Peterson: Withdraw the question.

By Mr. Peterson:
Q. In the manufacture of the butter which is involved in this case, and in the process and material that was used, was there any effect to cause the absorption and retention of abnormal quantity of water in the butter? A. No.

Q. Now, I will ask this other question over again, having reference to intent: as far as you are able to answer it: Assuming the testimony of Mr. Fadden to be true, as to the process and the materials that were used in the manufacture of this butter, is there anything that appears which indicates any purpose or intent, that the process used and the materials used, caused, and were intended to cause, the absorption of abnormal quantities of moisture, milk and cream, in the butter? A. There was not.

Q. In the manufacture and manipulation of the butter which is involved in this case, did the process and material which was used, have the effect of causing the absorption and retention of abnormal quantities of water in the butter?

A. Repeat the question.

Q. (Question last above asked the witness repeated to him to which he makes answer as follows): Absolutely not.

Mr. Jaques: He can't tell what the effect was.

The Court: He answered it. Let the answer stand.

69 Cross Examination of John Bower,

By Mr. Jaques:

Mr. Jaques: No questions.

By the Court:

Q. What do you mean by an abnormal quantity of water in butter?

A. I would say it would be that quantity which would be in there if abnormal systems of manufacture were used. I answered the normal, that is, about 90 per cent would run between 14 and 18 per cent.

Q. Butter manufactured in what way?

A. In the common, commercial way in creameries.

Q. Then you would define the normal quantity as the quantity that is usually found in the average creamery?

A. Some creameries are possibly a little careless. I don't know as I would hold all with that; would say I would want to know the conditions—might have been the conditions that they didn't adopt normal methods.

Mr. Peterson: As I understand the witness answered Your Honor's question this way: In 90 per cent of the cases, in 90 per cent of the cases where butter is made in a normal way, we find a range of 14 to 18 per cent; that is what he means to say, in answer to Your Honor's question. [Whe] he means by "normal", or what would be "abnormal"; 90 per cent of the cases run 14 to 18. Whether he means the other 10 per cent is [absnormal] or not, I don't know. He said 90 per cent of the cases [runs] 14 to 18 per cent, according to his experience.

The Court: He said 90 per cent of the butter.

The Witness: I would eliminate all farm butter.

The Court: 90 per cent of the butter manufactured?

The Witness: Yes sir.

70 The Court: Runs from 14 to 18 per cent water?

The Witness: Yes sir—butter fat.

—The Court: Moisture. You would consider that a normal amount of moisture for creamery manufactured butter?

The Witness: Yes sir.

By Mr. Peterson:

Q. What about Dairy butter?

A. It may contain anything; it may be as low as 8 per cent and as high as 30.

Q. In other words, first-class dairy butter, or farm butter, made on the farm, made normally, had a moisture content of 20 per cent? A. Absolutely.

—Q. be first-class butter? A. Yes sir.

Q. In other words the tendency of your process and materials, using the language of the law, in the manufacture of creamery butter, would be to eliminate more moisture than the tendency—than the natural tendency of the making of butter upon the farm? A. Absolutely so.

Q. So it is an approved process of elimination of moisture, as against dairy butter? A. Yes sir.

Q. And, as far as range is concerned and normal season is concerned, we have got a bigger range with the lower minimum and a larger maximum, in the case of dairy butter, relatively speaking, as against creamery butter? A. Yes sir.

Mr. Jaques: That is leading.

The Court: I suppose it was leading.

Re-Cross Examination of John Bower,

By Mr. Jaques:

Q. When you speak about this normal content of butter—of moisture in the butter—I notice when you testified

71 you spoke about "normal content of butter now?"

A. Yes sir.

Q. And by "now" you mean since May or June, 1902?

A. I referred more particularly to the advent of the combined churn and worker, modern system of churner. I don't refer——

Q. You refer particularly to that? A. Yes sir.

Q. Now, prior to June 1902 and the adoption of this regulation making a maximum of 16 per cent in butter according to the Internal Revenue Department, butter didn't run, normally made butter, didn't run from 14 to 18 per cent, did it, from the creamery?

A. What butter I tested did, coming from the State of Iowa into our creamery to be tested.

Q. Coming from the State of Iowa?

A. Yes sir, from local creameries in the State of Iowa.

Q. But, are you familiar with the statistics of the tests of butter prior to 1902?

A. To some extent. I have read them. I presume I forgot most of them.

Q. And you know that those tests made in those days were not maximum, had been fixed by the Internal Revenue Department; butter ran all the way from 18 per cent moisture to about 13, don't you? A. Ran higher than that.

Q. Ran higher than that? A. Yes sir.

Q. Before 1902? A. Yes sir.

Q. Creamery butter? A. Creamery butter.

Q. Are you familiar with any tests carried on by the government or by anybody else, that showed the butter run higher than previous to 1902? Can you call our attention to any regulation or any authority? A. No sir, I can not.

Q. You live in Minnesota? A. Yes sir.

Q. And you are familiar with the laws of Minnesota in regard to butter?

Mr. Peterson: Objected to as immaterial.

The Court: What has that to do with it.

72 The Witness: I don't read laws enough to know, Mr. Jaques. If you ask a specific question about a law, I may be able to.

Q. Doesn't the law of Minnesota make it unlawful to

manufacture or sell butter containing 16 per cent of moisture or more?

Mr. Peterson: Objected to as immaterial under the state of the record.

The Witness: I don't know.

The Court: He may answer that.

Mr. Jaques: He said he didn't know.

(Witness excused).

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GERTRUDE SCHEIPL, being first duly sworn, testified as follows on behalf of plaintiff.

Examination in Chief,

By Mr. Peterson:

Q. Your name is Gertrude Scheipl? A. Yes sir.

Q. And you live here in St. Paul? A. Yes sir.

Q. And you are employed by the Tilden Produce Company at the present time? A. Yes sir.

Q. And, Mrs. Scheipl, how long have you been employed by the Tilden Produce Company? A. Four years.

Q. About four years? A. Yes sir.

Q. And you have been in court and heard the testimony in this case? A. Yes sir.

Q. And in what capacity are you now employed, that is, what are your duties?

A. I am cream-testing just at the present time.

Q. Using what they call a Babcock Test? A. Yes sir.

Q. It appears that the butter in this case was made in
73 August and September, 1918. You were working for the Tilden Produce Company then? A. Yes sir.

Q. I will ask you if at that time you were making moisture tests? A. Yes sir.

Q. And I will ask you to turn to Serial F, Churn No. 160.

The Witness: Yes sir.

Q. That is in your handwriting? A. Yes sir.

Q. And at that time you made the moisture tests?
A. Yes sir.

Q. And what is the moisture test shown there, calling your attention particularly to No. 160.
A. 16.4, first test; and 16 second.

Q. And after making the first test, you would make the report to whom? A. The butter maker.

Q. Or superintendent, as the case might be. The date of that? A. August 18.

Q. And is an accurate record, is it not? A. Yes sir.

Q. Made at the time, in the regular course of business?
A. Yes sir.

Q. And so there is a record, is there not, in your handwriting covering 172? A. Yes sir.

Q. And 219? A. 219.

Q. And 230? A. 230, yes sir.

Q. And 243? A. Yes sir.

Q. And 244? A. Yes sir.

Q. 251? A. Yes sir.

Q. 254? A. Yes sir.

Q. 255? A. Yes sir.

Q. 256? A. Yes sir.

Q. 267? A. Yes sir.

Q. 280? A. Yes sir.

Q. 297? A. Yes sir.

74 Q. 298? A. Yes sir.

Q. 308? A. Yes sir.

Q. 319? A. Yes sir.

Q. 353? A. Yes sir.

Q. 361? A. Yes.

Q. 421? A. Yes sir.

Q. 424? A. Yes sir.

Q. 425? A. Yes sir.

Q. 433? A. Yes.

Q. 436? A. Yes sir.

Q. 447? A. Yes sir.

Q. And there are tests covering each one of those churnings, are there not? A. Yes sir.

Q. And those churnings were made by you in the regular course of business? A. Yes sir.

Q. And the record which was made there is accurate, in accordance with the tests which you made? A. Yes sir.

Q. And that shows the moisture content, does it?
A. Yes sir.

Q. Now, Mrs. Scheipl, will you state to the court and jury what this test was, how you made it, just detail it in your own way.

A. First of all, the butter-maker sends up a sample. When I get that I emulsify it, and after that is done I take this sample and I weigh out 10 grams of butter into an aluminum cup, and after that has been weighed I take the sample and get it on to a hot plate, which stays there until the moisture has all evaporated, and after the evaporation I take the sample and replace it on to the scale, and I read right off of that scale the percent of moisture that is evaporated. That is the test.

Q. And you write it down? A. Yes sir.

Q. In other words, one of these instruments that is used, or on this scale, are degrees, or a graduated scale, and from that you can read the per cent of moisture?
A. Yes sir.

75 Q. So you don't have to weigh it first and weigh it afterward and subtract? A. No sir.

Q. The scale gives you the reading? A. Yes sir.

Q. If the reading is 15.9, you understand that that means that much moisture has been cooked off or steamed off?
A. Yes sir.

Q. By the process of heat? A. Yes sir.

Q. And you made those tests in the regular course of business, on samples that were furnished to you, as accurately as you could? A. Yes sir.

Q. And, altogether, you made hundreds of those tests?
A. Yes.

Q. Thousands of them? A. I guess so.

Q. And still making them? A. Not just now.

Q. But these were made at the regular time, on the day of the dates thereof, and when the churnings were made, and you continued that work? A. At that time, yes sir.

By Mr. Jaques:

Q. What is this process that you use, what is that denominated in the butter trade? A. Process?

Q. What is the system? A. The Eastern Test.

Q. You are not a chemist?
A. I am partly a chemist, assistant.

By the Court:

Q. Explain to the jury emulsifying.
A. Getting the sample and mix it.

Q. How do you mix it to get it in the sort of liquid form so easily weighed out? A. Mixed with a knife.

Q. Stir it up? A. Yes sir, stir it up.

Q. Just stir it? A. Just stir it, yes sir.

By Mr. Peterson:

Q. The idea is to soften it up into a mass, and mix out the moisture into the different parts of it, if it is not already there?

A. No, it is—I [I] get that sample, I just merely mix

76 it to get it softened up so I can weigh it out easier.

Q. That is what you call emulsifying? A. Yes sir.

Q. You were taught to do that, and that is the customary thing that is done? A. Yes sir.

(Witness excused).

FRANK DORNIDEN, being first duly sworn to tell the truth, the whole truth, and nothing but the truth, testifies as follows:

Examination in Chief,

By Mr. Peterson:

Q. Mr. Dorniden, you live here in St. Paul? A. Yes sir.

Q. By whom are you employed at the present time?
A. Milton Dairy Company.

Q. In what capacity? A. Butter maker.

Q. How long have you been manager of the Milton Dairy Company? A. Since January.

Q. Since January 1921?
A. Since January 1921, last January.

Q. You formerly worked for the Tilden Produce Company?
A. Yes sir.

Q. And you worked for the Tilden Produce Company in August and September, 1918, did you not? A. Yes sir.

Q. In what capacity? A. Butter maker during that time.

Q. And were you the butter maker working there at the time the butter that is involved in this case was manufactured? A. Yes sir.

Q. And you know Mr. Fadden? A. Yes sir.

Q. And you know Mr. Tilden? A. Yes sir.

Q. You heard the testimony of Mrs. Scheipl, did you not?
A. Yes sir.

77 Q. Are you the party that furnished here this sample?
A. Yes, sir.

Q. Will you state to the court and jury how you obtained these samples of butter, and what for, and at what stage in the manufacture of the butter?

A. Well, after the butter is worked I thought it was worked to a uniform body, took a sample four different parts in the churns with my finger; put them into a glass, sent them up to the girl to have them tested.

Q. Why did you take four samples in different parts of the churn?

A. So as to get uniform samples as possible, different parts of the churn.

Q. And the purpose of getting that sample was to have a test made of the moisture content? A. Yes sir.

Q. And the instructions were to hold the moisture content down to 16 per cent and under? A. Yes sir.

Q. And the time of churning was largely a matter of judgment, was it not, on your part? A. Yes sir.

Q. Based upon your experience as a butter maker and temperature condition of the cream, the looks of the granules and weather conditions and the like? A. Yes sir.

Q. You heard the testimony of Mr. Fadden, didn't you? A. Yes sir.

Q. And in a general way the details of the making of this butter were as he testified? A. Yes sir.

Q. Now, Mr. Dorniden, in the manufacture of this butter, was any process or material used with intent or effect to cause the absorption of abnormal quantity of water in the butter?

Mr. Jaques: Objected to as [imcompetent], irrelevant and immaterial.

The Court: He may testify as to what his own intent was.

The Witness: No, there was [not] intent.

By Mr. Peterson:

Q. And was any material used the effect of which was
78 to cause absorption of abnormal quantity of water?
A. No sir.

Q. What was the purpose of the washing?

A. To wash all the butter milk out so as to keep better for keeping purposes.

Q. And washing is the customary thing in the making of butter, is it not? A. Yes sir.

Mr. Jaques: I would say to Counsel, we understand that butter has to be washed.

Mr. Peterson: You started in and tried to leave the impression we were [purring] water by doing that, in the examination of Mr. Fadden.

Mr. Jaques: I didn't start in with any such object as that.

Cross Examination of Frank Dorniden,

By Mr. Jaques:

Q. How long did you work for the plaintiff company, the Tilden Produce Company, at the time you were there in 1918?
A. I worked there about eight years.

Q. Eight years at that time. When did you become a butter-maker?
A. I made butter there the last four or five years I have been there.

Q. Four or five years previous to 1918? A. Yes sir.

Q. Been making butter. And then did you work this four or five years after 1918, is that what you mean, was there eight years altogether, four years before 1918 and four years after?
A. No, that is the time I made butter; I worked there longer than that before 1918, but never made butter.

Q. Been a butter-maker for four years prior to 1918?
A. Yes sir.

Q. I notice, Mr. Dorniden that these 26 churnings of butter, August and September, 1918, all, according to this
79 exhibit 1,—you were in court when that was introduced? You are familiar with that exhibit?
A. Yes sir.

Q. All of your tests of butter made in those churnings showing approximately 16 per cent moisture—not varying a half of a per cent?
A. Not all of them fell to 16½ per cent—not all of them were within a half per cent of 16.

Q. No, I see here is one that was 15.4 per cent. That was within 6 tenths of a per cent of 16.—I see two of that kind—that is what you mean when you say not all of them?
A. You said all of them.

Q. Here is one 15.2. I want to give you credit for business. That was only 8 tenths of 1 per cent from the 16.
A. That is right.

Q. Now two of the others were 16 per cent and the rest of them ran from 15.5 per cent to 16. Some of them 15.9 per

cent, 15.8 per cent; another one is 15.9 per cent, and we come to another, 15.8, and 15.9—approximately 16 per cent moisture. How do you account for the fact that all of those tests of butter you were making at that time came within such a narrow margin of 16 per cent?

A. According to the season of the year and the way it was worked.

Q. And the way it was worked. You don't think that that kind of a butter, just made to get quality, just kind of worked out, that it would all land within 8/10ths of 16 per cent moisture, do you? A. Didn't all land that way.

Q. They were all approximately—not all of them, the largest number of them, were about approximately 16 per cent moisture. You don't think that is a natural thing in butter-making, unless butter-makers make efforts to control them?

A. We make the best efforts we can to control it.

80 Q. In other words, you make the best efforts you can to get it just below 16 per cent moisture. Is that right? A. No sir, not just exactly.

Q. What is it, then? A. That is to keep it under 16.

Q. The great effort is to keep it under 16, is that it?
A. Yes sir.

Q. It naturally, making butter in the normal way, runs over 16 always? A. Not always.

Q. Well, approximately always? A. I wouldn't say that.

At this time in the trial of the case an adjournment was taken to 10 o'clock A. M., June 21, 1921.

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81 Proceedings of June 21, 1921. Morning Session.

Frank Dorniden called for further cross-examination.

By Mr. Jaques:

Q. Mr. Dorniden, this was a Victor churn that you had?
A. Yes sir.

Q. How many rolls? A. Four.

Q. What is the style of this churn, what number?
A. Size F.

Q. What kind of cream was that, that time of the year, 1918? A. It was ordinary cream at that time of the year.

Q. Good cream. You first churned the butter? A. Yes sir.

Q. And this churn has the washer process to it?
A. You wash the water after it is churned, you wash the butter milk out—regular washing process.

Q. How many revolutions in churning the butter?
A. Turn over once or twice.

Q. With the rollers in gear? A. No sir.

Q. That was in the presence of the wash water? A. Yes sir.

Q. They washed the butter milk out of it? A. Yes sir.

Q. Then this churning afterward was worked—the butter was worked by the churn also?
A. After the water was taken out of it, yes sir.

Q. You mean after the wash water was taken out of it?
A. Yes sir.

Q. What was the temperature of the wash water that was used.
A. I couldn't tell you just exactly, 52 or 54, something like that.

Q. 52 or 54? A. Yes sir.

Q. That was used in Washing the butter milk out?
A. Yes sir.

Q. In your procedure there, you first washed, or worked, this butter in the presence—with the wash water in it?
A. No sir.

82 Q. Did you just say so?
A. No sir. I didn't wash with the water, I said after the water was taken out.

Q. The first is to wash the butter milk out?
A. I wouldn't call that working by turning the churn.

Q. Then you revolved the churn while the washwater was in there? A. Yes sir.

Q. And after it was drained off you revolved your churn?
A. Yes, sir, the water was off.

Q. That is, just as much of the water as you could get off, then you worked it in addition, after that?
A. Drained all we could out, yes.

Q. Did you have any knowledge as to this butter, after it was returned from Chicago?
A. No, just that I seen the samples taken out of it, that is all.

Q. You saw the samples after it was returned?
A. I seen them taken out of the tubs when they were sent to be tested.

Q. Did you test or analyze it? A. No sir.

Q. Were they analyzed?
A. They were tested. I don't know who tested them or anything else.

By the Court:
Q. This Victor churn is a combination churn? A. Yes sir.

Q. How does it operate when worked?
A. When not churning runs in high speed, without the rollers turned; when working it runs at slower speed and the rollers work inside.

Q. What are the rollers?
A. Four rollers inside the churn that work the butter, when running in slow gear.

Q. You mean the butter goes through the rollers?
A. Yes sir.

Q. Kind of a wringer? A. Yes, they turn; they revolve.

(Witness excused).

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83 ARTHUR L. RADKE, being first duly sworn to tell the truth, the whole truth, and nothing but the truth, testified as follows:

Examination in Chief,

By Mr. Peterson:

Q. Where do you live? A. Plato, Minnesota.

Q. And that is in Carver County? A. McLeod County.

Q. And how long have you lived there?
A. Twelve years the first of April this year.

Q. What is your business, Mr. Radke?
A. Operator of the creamery.

Q. Butter maker? A. Yes sir.

Q. You use the word "operator". You mean, make the butter? A. I make the butter, also operate.

Q. Besides operating the creamery, you are the butter maker? A. Yes sir.

Q. How long have you been butter-maker there?
A. Twelve years.

Q. Will you state briefly in your own way your training, special training, if any, and your experience as a butter-maker?
A. I worked three years as helper at the creamery at Hamburg. I attended dairy school 1907; charge of the Plato Creamery in 1909; been there every since. Practically all the creamery I run on my own hook was at Plato.

Q. In the manufacture of butter at a certain stage in the proceeding, you make a moisture content, do you not?
A. Yes sir.

Q. And did you hear the nature of the test that Mrs. Scheipl testified to when she was on the witness stand yesterday? A. Yes, I did.

Q. And you are familiar with that test? A. Yes sir.

Q. Is that the customary test that is made in creameries?
A. I think it is the test that is used in the average creamery.

84 Q. And it is the kind you use?
A. We use an Ames test, but it is the same method—the Eastern method.

Q. Now will you state the range of moisture content in accordance with your experience?
A. I found it to run from 9 to 18 per cent, depending upon the season of the year and the temperature.

Q. From 9 to 18 per cent?
A. Yes sir. Sometimes even up to 20.

Q. In other words, you do find it in your first test over 16?

A. As a general rule runs very close to 16 or over.

Q. As a general rule runs close to 16, but do you find it running over? A. Yes sir.

Q. And do you find it running over 16 where the butter was made in the usual and ordinary way, and you are merely working your butter after certain stage of the proceeding you making the test to determine the moisture content—do you find it 16 and over when the butter is made in the normal and usual way, and in a certain stage of the proceedings, after your butter is made, you make a test merely for the purpose of finding out what your moisture content is?
A. Yes sir.

Q. That is your experience? A. That is my experience.

Q. You have heard the testimony in this case, haven't you?
A. Yes, sir.

Q. Mr. Radke, was the process that was used in the manufacture of this butter the usual and customary process that is used in the manufacture of creamery butter?
A. According to the testimony, I would say it was.

Q. In the manufacture of this butter, was any process or material used the effect of which was to cause the absorption of abnormal quantities of water into the butter?

Mr. Jaques: Objected to as incompetent, irrelevant and immaterial.

85 Mr. Peterson: He has heard the testimony.

By Mr. Peterson:
Q. Mr. Radke, you have heard the testimony in this case as to manufacturing of this butter? A. Yes sir.

Q. Now, assuming that testimony to be true, I will ask you this; In the manufacture of butter, was any process or material used the effect of which was to cause the absorption in the butter of abnormal quantities of water, milk or cream?
A. Not according to the testimony.

Q. You answer that "No"? A. No.

Q. Now, I don't know whether you can answer this or not, Mr. Radke: This butter was made in August and September, in those months of the year. Can you tell me whether or not, in accordance with your experience, the moisture con-

tent of butter runs high—runs higher in August and September than in other portions of the year?

A. Yes sir,—except in the winter time.

Mr. Jaques: Objected to as incompetent.

The Court: He may answer if he knows.

The Witness: A. Why, it all depends upon the season of the year. If you should have rain later in the fall of the year, and late in the summer, have fresh grass, green grass, I think the moisture would run a little higher than it would along in the middle of the summer, providing we have a wet fall, we would have fresh grass, the moisture would run higher than in the middle of the summer, although, in the spring of the [years], probably the same.

By Mr. Peterson:

Q. When pasture is good, say, June, July, August and September, when pasture is good, do you find relatively a
86 higher moisture—a higher natural moisture content in the butter, than late in the winter time?

A. We do, yes.

Q. In other words, now, in the month of June, with the pasture good, would you find a relatively high moisture content? A. Yes, you would.

Cross Examination of Arthur L. Radke,

By Mr. Jaques:

Q. Mr. Radke, have you ever made butter for the United States Navy?

Mr. Peterson: Objected to as immaterial, Navy butter being made upon certain specifications furnished by the Government, no relation to any issues in the case.

The Court: How is that material?

Mr. Jaques: As indicating that the butter-makers control the moisture in the manufacture of butter.

The Court: He didn't ask him that question, whether they can control it.

By Mr. Jaques:

Q. Now, Mr. Radke, at the present time, the way buttermakers are trained, isn't it possible for them to control the amount of moisture in butter, or amount of water?

A. It is possible to control the amount of moisture, but you can't do it the first time—not a certain percentage.

Q. Now, you have made butter as low as 13 per cent?

A. Yes sir.

Q. Right along? A. No sir.

Q. You never made [in] under specifications of the Navy Department?

Mr. Peterson: Objected to as immaterial, not within any of the issues in the case, and Navy butter is made upon
87 certain specifications and not commercial butter.

Mr. Jaques: It would indicate.

The Court: I think he has answered the question put to him, whether it can be controlled.

By Mr. Jaques:

Q. Within what range can you control the amount of water content of butter? A. You mean the first time?

Q. Or any time, within a day?

A. Well, my experience has been when a commercial butter, try to get it as near the limit as we can, although it can be controlled lower.

Q. As I understand it, you—in manufacturing butter nowadays, you try to get it to contain as near to 16 per cent water as possible. Is that right? A. Yes sir.

Q. Then your manufacturing process is for the purpose of causing the butter to retain—absorb, as much moisture as possible, not to exceed 16 per cent. Is that right?

Mr. Peterson: Objected to, not within any of the issues in this case, the question being whether in the manufacture of the butter involved in this case, the process or material is used the effect of which was to cause the absorption of abnormal quantities of water.

The Court: He may answer the question.

Mr. Peterson: Exception.

The Witness: A. Well, we can not churn butter and be sure of 16 per cent.

By Mr. Jaques:

Q. I didn't ask you if you churned it to be sure of 16 per cent. (Question repeated to the witness).

A. Well, we try to get it as near to the limit as we can, without injuring the quality of the butter.

88 Q. You say the water content of butter ranges all the way from 9 per cent up to 20, if I remember your testimony right? A. Yes sir.

Q. Was that made under normal conditions—would it contain 19 per cent?

A. It would also depend upon temperature you are using.

Q. All on the temperature you are using? A. Yes sir.

Q. In other words, Mr. Radke, it depends upon the process used by you in the manufacturing? A. You could call it that.

Q. If you used a proper temperature, you would get 9 per cent of water, or if you used a certain kind of temperature you would get 9 per cent of water, in butter?

A. In certain seasons of the year you would.

Q. Now, will butter made from cream produced in August and September naturally contain as much water content as butter made in May and June?

A. Well, providing the season is just right.

Q. Mr. Radke, isn't it a fact that August and September is the matured grasses and the pasturage, not new and fresh grass, isn't it a fact that cream in August and September would be of a more substantial character than that in the early spring, when the grass first starts?

A. It would not be in every community.

Q. In Minnesota—we know the climate of Minnesota the jurors and everybody else—aren't the pastures dry as a rule in August, the last part of August and the first part of September? A. Not always.

Q. If it was a normal year, then, the moisture content wouldn't be as much in August and September as it would be in May and June?—would it?

A. It wouldn't be as much as it would be in the winter months.

Q. I am asking about May and June, not talking——
A. I think run just about the same.

89 Q. You think it would. In other words, you think the condition of the pastures from the 18th of August to the Middle of September would be similar to their conditions from the middle of May to the middle of June, do you want us to believe that? A. Providing the season is right.

Q. Do you have spring in August often? A. No sir.

Q. As a matter of fact can't any competent butter-maker, who has modern appliances, control the water content so as to be safely below 16 per cent?

Mr. Peterson: Objected to as immaterial, calling for the conclusion of the witness, not within the rule of law imposed by the Act of May 9, 1902, which is the law of this case.

The Court: He may answer that.

Mr. Peterson: Exception.

The Witness: A. He cannot by your first testing.

By Mr. Jaques:
Q. We are talking about whole process of manufacture, from day to day, as you run your creamery, can't you control it? A. Yes sir, you can.

Q. Now, using a Victor F churn. State whether or not a 17 tub yield in from twenty-five to thirty minutes would not indicate such a churning temperature that would result in the retaining or absorbing an abnormal quantity of water?
A. I use a Perfection Churn down there.

Q. You are familiar with the Victor churn?
A. I know what it is. I have seen them on the market.

Q. Never have used the Victor churn?
A. Not in the plant down there.

Q. Well, what would the result be from a Perfection churn, the one you use?
A. You mean relative to the churning.

90 Q. I will read the whole question: Using a Perfection churn, state whether or not a 17 tub yield in from twenty-five to thirty minutes would not indicate such a churning temperature churning as would result in retaining or absorbing an abnormal quantity of water?

A. We generally aim to churn from thirty to forty-five minutes down there.

Q. I asked you about twenty-five to thirty?
A. I don't know whether I could answer that question. I never churned it.

Q. You have already said that there was not anything about the process that was used here that would cause absorption or retention of water, and the testimony is that they churned from twenty-five to thirty minutes.
A. Not according to the temperatures they used.

Q. Are you familiar with Circular No. 31, U. S. Department of Agriculture Bureau of Animal Industry?
A. No sir, I am not.

Q. You have not kept up with the tests and literature on this matter of water content in butter?
A. Not all circulars that have been sent out or been printed.

Q. Are you familiar with the standard reference works on this subject of water content of butter? A. Yes sir.

Q. Which ones?
A. I have read the experimental Bulletin from the State Creamery.

Q. Experimental Bulletin from the State Creamery?
A. Yes sir.

Q. What state? A. Minnesota State Creamery.

Q. What others?
A. Just what knowledge I gained at the Dairy School.

Q. You live in Minnesota? A. Yes sir.

Q. You are familiar with the law of Minnesota as to the water content of butter, are you? A. Yes sir.

Mr. Peterson: Objected to as immaterial, not within the issues in this case, the standard of law [bring] fixed.

91 The Court: The answer may stand.

Mr. Peterson: Exception.

Redirect Examination of Arthur L. Radke,

By Mr. Peterson:

Q. Mr. Radke, in answer to one of the District Attorney's questions, you said that you had no control whatever of what the moisture content would be on the first test? A. Yes sir.

Q. Did you not? A. Yes sir.

Q. I will ask you this, do you mean by that, when butter is made in the ordinary way at a certain stage in the manufacture of the butter, you make a test to determine the moisture content? A. Yes sir.

Q. And that was done here, wasn't it?
A. According to the testimony it was.

Q. According to these reports and these records it was done here? A. Yes sir.

Q. You do that? A. Yes sir.

Q. And it was commonly done? A. Yes sir.

Q. And the idea of doing that is to get a test relatively with reference to whether it is under or over 16 per cent?
A. Yes sir.

Q. That is the practice in the making of all creamery butter, isn't it? A. Yes sir.

Q. And in case that moisture test shows a moisture content over 16 per cent, what do you do?
A. It is reworked a little longer and re-tested.

Q. You work it a little longer. And then you test it over again? A. Test it over.

92 Q. And, I will ask you this: In the reworking a little longer, is it the idea to express or press out some more moisture, and get your content under 16 per cent, is that the idea? A. Yes sir, that is the idea.

Q. And you are the butter maker at the present time in the Plato Cooperative Creamery? A. Yes sir.

Q. And have been for a number of years? A. Twelve years.

Q. And that is the way you do? A. Yes sir.

Q. And that is the way it appears according to the testimony was done here? A. That is the way it appears.

Q. And so, by your testimony, you can't control it, you mean on the first test you determine what it is, then if it was over 16 per cent, you work out some more moisture, that is what you mean? A. Yes sir.

Q. Can you keep on working it? Can you keep on working it so as to injure the texture or grain of the butter, by over-working? A. You can injure it by over-working.

Q. So is it customary and practical, when your test shows under 16 to let it alone? A. That is the general practice.

Q. That is done here, according to the testimony, and that is the way you do? A. Yes sir.

Q. And that is the way butter-makers generally do?
A. According to my knowledge.

Q. Cooperative butter-makers and other kinds? A. Yes sir.

Q. Now, you can have good grass in the middle of August?
A. Certainly can, if you get the rain, and moisture.

Q. You can have just as succulent pasture in August, up to the middle of September, as you may have in June or July? A. Yes sir.

Q. And you may have some poor pasture in May?
A. Yes sir.

Q. Depends upon the season, that is what you meant to testify to, is it? A. Yes sir.

93 Q. Now, the length of churning is based a large measure, is it not, upon the judgment of the butter maker?
A. It is.

Q. In other words, you churn one day and wash it the next, and so you get a knowledge and a history of about the time that the temperature you are using it takes to properly churn the butter, do you not? A. Yes sir.

—Q. Churn the cream? A. Yes sir.

Q. And so, churning from day to day, can you tell about when the cream has been churned, or revolved, spun, enough, in the revolving churn?
A. You mean to tell when the butter would break?

Q. Yes sir.
A. There is glass in each end of the churn that will show you just when the butter breaks.

Q. And by watching that the temperature you are using, can you tell about when the cream is churned? A. You can.

Q. And about when it is time to stop the churn?
A. Yes sir.

—Q. And wash the butter off and the [casine] off?
A. Yes sir.

Q. So, as far as the particular number of minutes is concerned, that yields to the actual process and to the point when the butter fat is churned out of the cream? A. Yes sir.

Q. And so, from day to day, the temperature may be watched, and can be known to the butter-maker who is making the butter? A. It can.

Q. And the temperature and the time and the point when the granules of butter fat appear, indicate the stage of the process to the butter maker? A. It does.

Q. His Honor asked the previous witness what churning was and what working was. Mr. Radke, will you tell, in your own way, what you mean by "working the butter" after you wash out the butter milk—after the butter is churned?
A. After the washwater has been drained off——

94 —Q. Yes, what you mean by working, as distinguished from churning?

A. After the wash water has been drained off and salt been added to the churning, the churn is put in low gear, the rollers thrown in, and she is worked.

Q. That is what you call "working"?
A. Working, yes sir.

Q. And the process before that, when your churn is spinning, is called churning? A. That is churning.

Q. Then you take a moisture test, and your moisture content is too high, under the specifications that is given you, and you work it some more, what is that process?
A. That is to expel the moisture.

Q. It is to expel some more moisture. In using the word "working" there, do you mean working in the sense you have just defined that term?
A. That would be the same thing as working, yes sir.

Recross Examination of Arthur L. Radke,

By Mr. Jaques:

Q. Then the working process affects the moisture in the butter, as well as the washing process?

—Mr. Peterson: Expels some more moisture.

The Witness: A. The working process expels the moisture, Yes sir.

Q. Which affects—might, by breaking down the grain of the butter and cause it to absorb more water, might it?

A. You will not get any more moisture in the churn.

Q. When you rework it, you put water in?

A. No sir, do not.

Q. As a matter of fact if the grain in the butter is broken it will absorb more moisture, hold it?

95 A. Not according to my experience. I don't see how you can get more moisture in there, when you don't add to it.

Q. You are working that butter over again, to get moisture out of it. If the grain of the butter is down it will retain and absorb?

A. The doors are open to drain the surplus moisture.

Q. When the grain is broken it will hold the water, absorb it? A. It will not, providing you get it out.

Q. It would prevent your getting it out, wouldn't it? A perfect granule of butter would not absorb water—it can't be penetrated between the water—must be between the granules, and so forth? If it is broken the water would be absorbed into the butter fat wouldn't it?

The Court: What he means to say, in the working of the butter, the water has been expelled before the grain of butter is broken down? A. Yes sir.

The Court: Or else there wouldn't be any water there to be absorbed, unless water is added.

Mr. Jaques: But he reworks it when it is over 16 per cent, in order to get more water out of it.

The Court: As far as that is worked out it is drained out?

The Witness: Yes sir.

By Mr. Jaques:

Q. If the grain is broken it will be absorbed by the butter fat?

A. You can work moisture out before you break the grain.

Q. Now, when you say that the first manufacturing of butter you can't control the amount of water content?

A. Not to a certain percentage, no sir.

Q. What you mean to say is, that in the first working the butter you can't control the water content successfully to keep it below 16 per cent, for instance, 15.99 per cent,
96 or something like that—it is apt to run over the 16 point? A. It is.

Q. What you are doing in manufacturing butter, as the creameries now manufacture it, is to attempt to have the butter retain or absorb moisture up to just below 16 per cent?

A. No sir, provided get down to 15.5 leave it alone.

Q. How about 13?

A. Depends upon what market you are wanting to sell your butter to.

Q. If it came out 13, you might put it back and work it more to get it to absorb more water?

Mr. Peterson: Objected to as immaterial on the state of the record. There is nothing indicating any incorporation of water anywhere in the case.

By Mr. Jaques:

Q. I will ask you this: You wouldn't allow butter to go out of your creamery down there containing 9 per cent moisture?

Mr. Peterson: Objected to as immaterial on any issues of the case.

Mr. Jaques: I think it is material, how they are doing this.

The Court: He may answer the question.

The Witness: I wouldn't attempt to churn it to get it down to such a [law] percentage of moisture.

By Mr. Jaques:

Q. You wouldn't attempt to allow it to be churned in such a normal way so as to get down to 9 per cent?

A. I wouldn't attempt to churn it down to 9 per cent.

Q. But it can be done, and is apt to be done, if you just go churning cream for the purpose of getting a product of butter without reference to water content?

A. Can be done in certain seasons of the year.

Q. We are talking about August and September. Can be done then?

A. There is a change in August and September.

97 Q. A while ago you were asked about August and September again, but you don't dispute the fact that in August and September the pasturage is mature, the fresh grass coming on in the spring, young and tender, do you?

A. You could call it that, providing you have rains enough to make it [grown] again.

Q. The rain would make the grass young?

A. Make it grow.

Q. But it would be—the new growth would be mixing with the new grass—mixed with it, would not be like the 15th of May, when the grass first comes forth for the first time in the spring, all new?

A. I don't know whether I can give you any definite answer on that——

Mr. Peterson: You mean, that it might be possible, by continued working of butter, to express the moisture so it would be down to 9 per cent or 10 per cent?

The Witness: By continued working that might be possible.

Mr. Peterson: And in doing it, you might also destroy the texture of the butter?

The Witness: You would destroy it.

Mr. Peterson: Did you ever have any butter that tested 9?

The Witness: Not to put on the market, no sir—I have not [make] any.

By Mr. Jaques:

Q. Could butter churned—could well test 9 per cent, 10 per cent, 11 per cent, 12 per cent, or 13 per cent, if you were not using efforts in your process of manufacture to retain as much moisture as possible?

A. You mean just as to get 9 or 10, or 11, or 12, or 13?

Q. Wouldn't it fall naturally on that?

A. Depend upon the operator of the plant.

Q. Your process and the process of all creameries now, is to make butter absorb, or butter fat absorb, as much moisture as possible, without getting over 16 per cent, isn't it?

98 A. We do not try to make it absorb any more.

Q. Well, you have a process which prevents the coming through naturally as normal water content?—You have always got your water line of 16 per cent?

A. Yes, but if you can't hit the mark the first time; you would have to rework it a second time.

Q. It is because you are endeavoring to contain all the water it will up to 16 per cent, that you can't just hit the mark on the first test? A. There is no set mark there.

Q. There is a 16 per cent moisture?

A. You couldn't hit the 16 per cent moisture every time.

Q. You have to load the butter with water a good deal, to get it to 16 per cent, don't you?

A. I don't know what you mean by "loading".

The Court: You have stated that you try to get as near the limit of 16 per cent as you can, and still be below it. Suppose the limit was changed to 14 per cent, what change, if any, would you make in your process?

The Witness: Would have to use a lower temperature.

The Court: Use a lower temperature in churning the cream?

The Witness: Yes sir.

The Court: And what would be the effect of that?

The Witness: Well, if you drain it off, why your butter would be harder to expel it.

The Court: And be less water content in it?

The Witness: Yes sir.

Redirect Examination,

By Mr. Peterson:

Q. Just one or two questions, to leave your testimony right. As I understand you, temperature is one of the elements that has some relation to moisture, isn't it?

A. Yes sir.

99 Q. And the lower the temperature the longer you would have to churn, generally speaking?

A. The lower the temperature the longer you would have to churn.

Q. And besides temperature, of course, the natural water constituency of cream is an element, isn't it? A. Yes sir.

Q. And the size of the churn and the time of churning are also elements?

A. The size of your churn has a whole lot to do.

Q. In answer to His Honor's question, if you got a moisture content of 16 per cent by continued working, you could reduce it down to 14 per cent?

A. You could, but would break the grain on the body, if you worked it too much.

Q. You could reduce it down to 14 per cent?

A. You could.

Q. When a test shows 16 per cent of moisture by working that some more, can you expel some more moisture, and thereby reduce the moisture content to below 16 per cent.

A. You can.

Q. And if you kept on working it long enough, you would expel it so it was down to 15? A. Yes sir.

Q. And if you kept on working it long enough, you would expel it down to 14? A. You could, if you worked it enough.

Q. And so you might work it enough so as to get it down to 9 per cent, as a possibility?

A. I think you could. You would have some stiff butter then.

Q. And so there is danger—so over-working has con-

nected with it the danger of impairing the quality of your butter? A. Yes sir.

Q. Now, instead of working up the 16 per cent, Mr. Radke, I want to ask you this question, and I want a fair answer: Is it the effort of your butter maker to hold the moisture content under 16 per cent? A. It certainly is.

Q. And is that what you mean by your testimony?
A. Yes sir.

Q. And for that purpose you make a preliminary test,
100 and if it is over, you work it some more? A. Yes sir.

Q. Until in the judgment of the butter maker and according with the moisture test, it is under 16 per cent?
A. Yes sir.

Q. And that is all there is to it? A. That is all.

Q. And to get it under 16 per cent, you take into consideration the time of your churning, the condition of your cream, and the temperature and the attendant circumstances within the knowledge and experience of the butter maker?
A. Yes sir.

Q. With the purpose of holding it down under 16 per cent?
A. Yes sir.

Q. Which is the regulation? A. Yes sir.

Q. That is all there is to it? A. Yes sir.

Q. And if your standard were 14 per cent, would have to work out some more moisture? A. Yes sir.

Q. And that is all there is to that, isn't it? A. Yes sir.

—Q. If you could? A. Yes sir.

Q. If the standard were 14 per cent, if there was some regulation about 14 per cent moisture, if there was some specification that a fellow churning butter wanted it 14 per cent moisture, I will ask you, would you have to keep on working it and testing it until you approached—until you got down to 14 per cent? A. Yes sir.

Q. And in doing that, might injure it and might the texture and the grain of the butter break down? A. Yes sir.

Q. And if it did, you wouldn't have the quality?
A. Yes sir.

Q. And that is all there is to that, isn't it? A. Yes sir.

Q. Butter-making isn't a matter of incorporating water, or absorbing water, it is a question of expelling water down to under 16 per cent? A. Under 16 per cent.

101 Recross Examination of Arthur L. Radke,

By Mr. Jaques:

Q. I understood from your answer to the Court's question, that if the maximum amount of moisture allowed in butter was 14%, that you would adopt a process by which when you had churned the butter, it would only contain 14%, didn't you—lower the temperature, change the process, so that the butter would come out 14%?
A. Could not get it to 14%.

Q. Not exactly, but you would get it near 14%, the same as you get it near 16% by your present process?
A. Providing you could, yes.

Q. You told the Court you could by regulating the temperature—for instance, now, you got a contract where the maximum amount of moisture was 14%, you wouldn't run the butter up to 16% and expel the water; you would adopt a process to bring it—isn't there more effort to get it up to 16% than there is to get it down to 14?
A. I think the average butter runs closer to 15 and 16% than below.

Q. With the processes which you folks use, which has the object of having as much moisture as possible in the butter——

Mr. Peterson: Objected to as improper; there is a regulation of the Department allowing 16%, and the process is to keep the moisture under that.

Mr. Jaques: There is a regulation here of a maximum of 16%. Now these men want to run for the maximum, and get over, and have adulterated butter.

By Mr. Jaques:
Q. By the way, your creamery has been up for adulterated butter itself, hasn't it? A. Yes sir.

Q. What is that? A. It has.

Mr. Peterson: And we got the money back?

The Witness: Yes sir. Took four years to get it.

102 By the Court:

Q. What temperature do you use on your cream in churning? A. That depends upon the season of the year.

Q. In August and September?
A. All the way from 46 to 50, 51, 52.

Q. And you were trying to get butter the content of which shall be, water content, shall be less than 16%? A. Yes sir.

Q. If you were trying to get butter the water content of which should be not—over—14%, what temperature would you use in your cream in churning?
A. You would use as near 46 as you could, and expel as much moisture as you could get out of it.

Q. Would you reduce the temperature of your cream when you began churning?

A. You would have to reduce it in order to get a firmer body.

Q. You would reduce the temperature of your cream, if you were trying to get 14% as the maximum in your butter, 14% water, would you? Do you understand what I am driving at?—If you are trying to get butter containing not over 14% water, would you have your cream colder when you churn it, than you now have it, when you are trying to get butter having over 16% water?
A. You would to a certain extent.

Q. Would that made a difference?
A. I wouldn't just exactly say it would make a difference alone.

Q. Would it make any difference? A. I think it would.

Q. You think it would reduce the temperature of your cream, when you churned it would produce butter with a lower water content? A. Providing you drained it out good.

Q. Suppose you use the same process as you do now, only you reduce the temperature of your cream at the time of churning? A. Yes sir.

Q. You would get a lower content of water in your butter?
A. I think you would.

103 Q. That is what I wanted to know, whether that had anything to do with it.

By Mr. Peterson:

Q. In other words, temperature does affect the moisture within certain limits? A. It does to a certain extent.

Q. In accordance with your experience? A. Yes sir.

Q. But you don't pretend to state with scientific accuracy, just what effect moisture content temperature alone would have, do you, Mr. Radke?

A. No, you would try to get a firmer body to it, in case you are over the limit you could work it more without injuring the grain. That is the idea of using lower temperature.

Q. I will ask you this,—which is along the similar line as indicated by the Court's question: In order to churn, with the idea of getting a 14% moisture content in the churning, your temperature would have to be abnormal—different from the customary temperature, as butter is churned?

A. Yes sir.

Q. So you would have to depart from normal methods to get a 14% natural water content in the churning?

A. Yes sir.

Q. In the churning you would have to depart from the normal? A. Yes sir.

Q. And have to make butter with an abnormal temperature? A. Yes, sir.

Q. Now, besides an abnormal temperature, wouldn't you have to churn the cream an abnormal length of time?

A. You would have to churn the cream two hours.

Q. Instead of thirty-five minutes? A. Yes sir.

Q. So, in order to approach a 14% moisture content in the churning of butter, you would have to depart from normal methods, as to temperature, and the process and the length of time of churning the cream? A. You would.

Q. And is it practicable to churn two hours?

A. It is not.

104 Q. And if you wanted to churn to get it down to a 14% normal water content, it would be more expensive? A. It would.

Q. You couldn't do it and compete with ordinary methods of making butter? A. You could not.

By the Court:

Q. 46 degrees in August, is an abnormal temperature, isn't it? that is to say it is an artificially cold temperature?
A. It is.

Q. If that was reduced to 42, simply be an artificially cold temperature? A. Yes sir.

Q. Perfectly possible, would it be, to reduce your temperature to 40? A. You can get the cream down to 40.

Q. And it would be perfectly possible, if necessary, to churn it in two hours?
A. It would take about two hours to churn it.

Q. You could run your churn two hours? A. Yes sir.

Q. And if everybody was reducing their cream to 40 degrees of temperature, and churning for two hours, then I suppose you would say that was the normal way of producing it? A. If they were all doing it, yes sir.

Q. Now, if they were all using 46 degrees to 51, churning thirty-five to forty minutes, you say that is the normal way; what you mean by "normal" is, the usual way?
A. Usual way.

(Witness excused).

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105 HENRY DUVEL, being first duly sworn to tell the truth, the whole truth, and nothing but the truth, testified as follows on behalf of Plaintiff.

Examination in Chief.

By Mr. Peterson:

Q. Where do you live? A. Bellingham.

Q. Mr. Duvel, in what county is Bellingham?
A. Lac Qui Perle.

Q. What do you do there?
A. At the present time running produce business.

Q. And have you been in the creamery business?
A. Yes sir.

Q. In what capacity?
A. I have made butter since 1904 up until a year ago this last fall.

Q. Do you know to make butter? A. I think so, yes.

Q. And in this case we are talking about creamery butter. Do you know how to make creamery butter? A. Yes sir.

Q. And you have made it in many creameries, have you?
A. Yes, sir.

Q. And with what creameries were you connected?
A. Been connected with the Minnesota Lake Creamery, Hamburg creamery, creamery at Waseca, Elbow Lake Creamery, some of them cooperative and some of them individual.

Q. Mr. Duvel, in the making of butter, have you made or noticed the result of the moisture tests? A. Yes sir.

Q. In Minnesota? A. Yes sir.

Q. Here in this state. In connection with your work as butter maker and for these different creameries? A. Yes sir.

Q. Within what ranges do you find your moisture content, on making a test, after the butter is churned?
A. Well, the first tests as a rule——

—Q. I am asking you the limits—not asking you after you make your first tests—I am asking you the range?
A. Ranges all the way from 10 up to as high as 20, as I have found it.

106 Q. You find those ranges, do you? A. Yes sir.

Q. And when you find those ranges, do you mean that in accordance with the test that appears to be the natural moisture constituent? A. Yes sir.

Q. In other words, from the grasses or the kind of cattle and in the nature of things? A. Yes sir.

Q. Do you find those limits in the butter? A. Yes sir.

Q. I will ask you this question; then the particular moisture content that you found in a particular sample would be the normal and natural moisture content of that particular butter, wouldn't it? A. Yes sir.

—Q. And ranges as you said. I will ask you this: It is

not uncommon, is it, to find a moisture content of 16 per cent or over? A. No sir.

Q. In the making of your butter in the usual and the normal way? A. No sir, that is very natural.

Q. And a common thing? A. Yes sir.

Q. In your experience have you commonly found that to be true? A. Yes sir.

Q. You have heard the testimony in this case, have you not? A. Yes sir.

Q. As to how this butter was made? A. Yes sir.

Q. Assuming that testimony to be true, Mr. Duvel, I will ask you if the butter that is involved here was made in the usual and normal, customary way of making butter in creameries? A. Yes sir.

Q. Assuming the testimony to be true, I will ask you if in the manufacture of this butter that is involved here, any process or material was used the effect of which was to cause the absorption of abnormal quantities of water in the cream?

Mr. Jaques: Objected to as incompetent, irrelevant and immaterial. He didn't make the butter.

107 The Court: He may state, if he has heard the testimony.

By Mr. Peterson:

Q. You have heard the testimony in this case as to how the butter was made? A. Yes sir.

Q. Assuming the testimony to be true,—you have listened to it here, and it has been given under oath,—assuming the testimony to be true, I will ask you whether or not—I will ask you if in the manufacture of this butter any process or material was used the effect of which was to cause the absorption of abnormal quantities of water?

A. No, I don't think so.

Q. I will ask you this: If it is the custom and practice in the manufacture of creamery butter to make a preliminary moisture test, after the churning, and after the washing, with reference to whether or not that moisture content shows—with reference to what it shows, on the standard of 16 per cent? A. You mean——

—Q. In the manufacture of creamery butter, and after the churning and after the washing, there is a moisture content test, is there not? A. Yes sir.

Q. And I will ask you if it is the purpose of that moisture content test to find out what it is, with reference to whether it is over 16 per cent or under 16 per cent?
A. It is the purpose to find out what it is.

Q. To find out what it is? A. Yes sir.

Q. And that test is made—that moisture content test is made after the making of butter in the usual and normal and customary way? A. Yes sir.

Q. Just wash it to find out what it runs? A. Yes sir.

Q. And if it is over 16%, what is the custom and practice? What is the operation? A. Work it out.

Q. Work it out until it is under 16%. A. Yes sir.

Q. You work it some, then make another test, and if under 16, let it alone? A. Yes sir.

108 Q. Is it the idea to hold it in the judgment of the butter-maker, and in accordance with the test which he makes, under 16 per cent? A. Yes sir.

Q. And is there a danger of injuring the butter, if you work it down to 12 per cent, or 14 per cent?
A. Yes sir. The chances are it will.

Q. And in working the butter some more, with the first test showing over 16 per cent, are the lids of the churn left open, so that the water which is expressed out of the butter will run out of the churn? A. Yes sir.

Q. And for that purpose, is it revolved, or worked?
A. It is worked.

Q. Is the churn revolved? A. Yes sir.

Q. So that when the open space in the lid gets down to the nearest point to the floor the natural tendency, by reason of gravity, would be for the water to run out? A. Yes sir.

Q. And the water would naturally fall in that operation of working and churning, to the bottom of the churn?
A. Yes sir.

Q. And as the open space came there it would run out?

A. Yes sir.

Q. And that would be a continuous draining process? A. Yes sir.

Q. And if you kept that going long enough, you might break down the [testure] of the grain? A. Yes sir.

Q. And so you might get an oily butter? A. Yes sir.

Q. And an oily butter might absorb—might have a tendency to absorb moisture more than a fine granule or fine texture, if there was any moisture there? A. Yes sir.

Q. But the moisture would be gone? A. The moisture would be gone, yes sir.

109 Cross Examination of Henry Duvel,

By Mr. Jaques:

Q. You mean to say that a good butter-maker, by the use of normal methods, can't control the water content of butter, say between 10 and 20 per cent of moisture?

A. No, not right along.

Q. You mean to say that butter—or cream (stricken out). Do you mean to say, in the manufacture of butter, with ordinary cream, and in a normal way, would ever result in 20 per cent water? A. Yes, it would.

Q. You say it would? A. Sure.

Q. Now, churning butter in the ordinary way, using cream and wash water 46 temperature, would that ever produce—— —A. Cream and wash water?

Q. I mean using the wash water you use and 46 per cent (degrees?) temperature, and the cream you churn 46 degrees temperature, would ever result in 20 per cent of water?

A. I never knew that.

Q. Then, you butter-makers control the water content to a large extent? A. We try to control it, under 16.

Q. You can do it? A. Not always.

Q. Very near margin. Within a point or two?

A. We try to get below it, and we do get below it if possible.

Q. You try to get below it. Do you mean strictly now to tell us you try to get below it, or try to get up to it?

A. Try to get below the 16%

Q. And just as close to 16% as you can?
A. Not always. I would rather have 15½ as to have 15.8 or 15.9.

Q. For fear it would be over the line of adulterated butter? A. Yes sir.

Q. You think it is a greater precaution to have it 15.5 than it would be to have 15.99 moisture? A. Yes sir.

Q. What was the creamery that you worked at last?
A. Bellingham Creamery.

110 Q. Was that a cooperative? A. No sir, individual.

Q. By that you mean centralizers?
A. No sir, I run it myself. I was not centralizing.

Q. Have you kept up with the literature of this question of water in butter? A. Yes sir.

Q. You are familiar with Circular No. 31, United States Department of Agriculture, Bureau of Animal Industry?
A. I don't remember the numbers. I have read them as they come along.

Q. Do you remember whether you read the circular which has the water content of creamery butter? That was the one made by Alford? A. I don't remember.

Q. This circular gives the analysis of 730 packages, from over 400 different creameries in the United States, in 8 states; samples were made to all seasons of the year, and the entire lot has an average content of 11.78?

Mr. Peterson: Objected to as improper cross-examination, no proper foundation laid for the question.

By Mr. Jaques:
Q. Did you ever see that in any of these circulars?

The Court: He may answer.

Mr. Peterson: Exception.

The Witness: A. No, I didn't see that.

By Mr. Jaques:
Q. What works on this Water Content in Butter are you familiar with, if any?

Mr. Peterson: Objected to as immaterial.

The Court: He may answer.

Mr. Peterson: Exception.

By Mr. Jaques:

Q. What works, reference works, in regard to Water Content of Butter are you familiar with, if any? A. In what way?

Q. In what way? You are not familiar with any of them, read them?

111 A. I am familiar with the ordinary way of making butter and working the moisture out.

Q. I am asking you about the reference works in connection with that subject. You are a professional butter-maker, ought to have some information about the literature of the subject, the tests that have been made, and so forth? Do I understand you have no familiarity at all?

A. I don't know. I may be could answer you, if I understood you just how.

Q. I am asking you whether you are familiar with any of the reference works or authorities on that subject of water content of butter? A. Yes sir.

Q. What ones? A. Testing it.

Q. No, no; reference works. I am asking about—books?

Mr. Peterson: Objected to unless counsel calls to his attention whether he is acquainted with any particular reference work, naming it.

The Court: He may state if he has in mind any particular pamphlet or book he has read on the subject.

The Witness: A. I have read quite a number of them, but the name of them I don't remember.

By Mr. Jaques:

Q. For instance, have you any familiarity with the book called "Milk and its Products", by Forgton(?) and Wald?

A. Yes, I have read that.

Q. Did you notice in that book that 350 World's Fair samples, in 1893, Average water 11.57; 50 samples Wisconsin Agricultural Exposition Station Bulletin No. 56, average water 12.77?

Mr. Peterson: Objected to as immaterial, not within any of the issues in this case, and it not appearing how the butter was made.

Mr. Jaques: We take the position that normal manufactured butter can better be determined by the water
112 content of butter, by reason of the liberality of the government in giving them a maximum of 16 per cent.

The Court: How do you define the normal water content of butter?

Mr. Jaques: We think the normal content of butter would be what was normal, or average in the manufacture of butter previous to the passage of this law, and previous to the 16 per cent limit.

The Court: I don't think average content of butter made in creameries at a particular time—prior to 1902?

Mr. Jaques: Yes sir.

The Court: Whereas, I suppose, the plaintiff, if he adopts your definition of normal average, would take some other period of time.

Mr. Jaques: I suppose he would want to.

The Court: Who is to determine, under those circumstances what period is to be selected?

Mr. Jaques: I think the natural—before there was any condition that would encourage——

The Court: I think the word "normal" and "abnormal" are the worst-abused words in the English language.

Mr. Peterson: I presume that this is the way to get at it, at least this has been my idea about it. I have asked these gentlemen, all of whom appeared candid here, the ranges within which they find the moisture content from the tests that they have made, and they give it that way. Now, "normal", I presume, means ordinary, usual, the particular moisture content of any particular sample of butter is normal to it.

113 The Court: I say, the word "normal" means one thing to one person, and another thing to another person. It may mean deviation from standard. We speak of a man's temperature, of a man's blood, is fixed by natural laws pretty close to a certain point, and when it differs from

that we call it an "abnormal temperature", because the tendency is for it to return to that particular point. That is the real meaning of the [work] "normal",—departure from a standard, with a tendency to return to that standard. But there is no such thing as that when you speak of "the normal content of water in butter", if butter is manufactured under widely different circumstances, it will have widely different contents of water.—What the "normal" is,—if you go to use the word "normal", it resolves itself into what the average is, and then you have got to determine what particular period of time you are talking about, whether you are talking about butter made on the farm, in the old-fashioned churn, stone churn, or whether you are talking about butter made under the modern conditions of the creamery. So that I think the word "normal"—the word "abnormal" is almost impossible of exact definition in this particular kind of a controversy.

By Mr. Jaques:

Q. Now, the University of Illinois Exposition Station, Bulletin No. 139, Competition of Market Butter, Carl E. Lee, Jesse M. Parker, in which there are statistics giving the average of 574 samples collected through a period of one year, beginning March 1907, Water Content an average
114 of water content of 13.50, and showing another series of figures of a test average of 67, Convention Butter, that is, butter made for exhibit, Water content 12.54. Are you familiar with that?

Mr. Peterson: Objected to, not proper cross-examination, no proper foundation laid for it.

The Witness: A. No sir.

By Mr. Jaques:

Q. Now, the United States Department of Agriculture, Bureau of Animal Industry, Bulletin 149, entitled "The Normal Composition of American Creamery Butter, by Thompson, Shaw and Norton, 695 samples, 488 creameries, in 14 states, showing an average water of 13.90. You never saw those statistics?

Mr. Peterson: Objected to as improper, no proper foundation laid for the question.

Preliminary Examination of the witness,

By Mr. Peterson:

Q. Mr. Duvel, just one or two things about quality of but-

ter: It is the effort, is it not, in the making of butter, to so—to make the butter so as to get the best quality of butter out of the cream that you have? A. Yes sir.

Q. And that is true now, and that ought to have been true in the early days? A. Yes sir.

Q. And the making of butter and arriving at a good quality is not affected by the fact that there is a regulation of about 16 per cent moisture, is it? A. No sir.

Q. Still trying to make good butter? A. Yes sir.

Q. The same as you always did? A. Yes sir.

Q. Is it the idea of the regulation to hold the moisture content under that? A. Yes sir.

By the Court:

Q. You say that this butter you made on testing
115 showed from 10 to 20 per cent water content?
A. Yes sir.

Q. Under what circumstances will it show 10 per cent?
A. There is a difference in churns; one churn that I had an awful job to get 15 per cent moisture in it, when I got it next I had an awful job to hold it below 16. So I lay the fault to the churn to a great extent, just as much as it is in the temperature.

Q. You think the make of churn has something to do with the amount of moisture that is left in the butter?
A. Yes sir.

Q. And that the temperature at which the cream is has also something to do with it? A. Yes sir.

Q. Did you ever make any test of the water content of butter fat, after the butter-milk was drawn off, but before the butter was washed? A. No sir.

Q. Have you an opinion as to whether water content of that butter before it is washed, is greater or less than it is after it is washed? A. I don't know.

Q. Have no idea? A. No sir. I have never tried it.

Mr. Peterson: The reason for that is washing is a necessary process anyway.

The Witness: Yes sir.

Examination by Mr. Jaques resumed:

Q. Now, Mr. Duvel, you said that you, with one of your churns had an awful job to get the water content up to 15 per cent? A. Yes sir.

Q. Why was it necessary for you to have any job at all in that respect?

A. There was no danger of me being afraid of going up to the 16 per cent. I could go ahead and make my butter and make it in the regular old way, and if I got 15 to 15½ per cent I would do well.

Q. It was quite an awful job to get it up to 15 per cent?
A. Yes sir.

116 Q. Why did you necessarily have such a job on your hands, if it was not that you wanted to get water in there to sell for butter?

A. Well, butter is bound to have a certain amount of moisture, doesn't it?

Q. Yes. And the less moisture it has the less water you sell for butter? A. Yes sir.

Q. Then your awful job of getting it up to 15 per cent was to have more water in the butter to sell for butter?

A. Sure, up to as high as you dare sell it.

Q. That is the way your creameries are working now, making it an awful job to get up the water content, instead of getting it down?

A. I don't know how others are doing it.

Q. That is the way you are doing it?

A. I don't, trying to hold it down.

Q. You are trying to hold it down to 13 per cent?

A. I am trying to hold it below 16.

Q. But you say you had one case where there was an awful effort to beat up to 15?

A. That is true, but I think it was the churn's fault.

Q. It is no miracle to get it up to 15?

A. Not with the churn I have there now.

Q. I mean it is no—you had a normal kind of a churn that wouldn't make it up to 15 per cent? A. I suppose.

Q. It was just making butter, it was not making water?

A. It was not making water.

Q. Then you got another churn that you work, send her up kiting up above the danger line?
A. I think that one is the average churn.

Q. Have the manufacturing of churns been changed since this rule of 16 per cent moisture? A. I shouldn't wonder.

Q. And altered with a view of retaining more water, causing the butter fat to absorb more water?
A. I don't know if the factory had anything to do
117 with that. I am just talking about this one particular churn I had that I couldn't handle any better.

Q. The whole art of butter-making is to make it contain as much water as possible, not to exceed 16 per cent, that is your whole art?
A. Yes sir.

Q. That is artificial? A. No, that is not artificial.

Q. Why sure. The effort is that way. When you found this churn gave you an awful job to get it up to 15 per cent, you changed the churn? A. No, it wore out.

Q. You were not looking for that type of a churn.

Redirect Examination of Henry Duvel,

By Mr. Peterson:
Q. In the churning of butter, with that type of churn, your first water test ordinarily showed between 15 and 16, is that what you mean, and around 15?
A. It showed around 15. Well, of course, I don't remember just exactly the figures any more, but I know when I got through making my butter I would test the churning after churning, and I very seldom had it higher than 15 per cent moisture in it, 15 to 15½ per cent moisture.

Q. That was your experience with that churn? A. Yes sir.

Q. Do you remember the name of that particular churn?
A. It was a Disbrow Churn, I don't know whether L. A. or L. B.

Q. Insofar as your experience with that churn was different, although you made butter in it, in the normal way, the experience was different than it was with other churns?
A. Yes sir.

Q. And with other churns you would have a greater variation? A. Yes sir.

Q. That is what you mean? A. Yes sir.

118 Q. And you mean by the expression that you used that to have a variance other than around 15 per cent moisture, with that Disbrow churn, you would have to use some abnormal methods?

A. If I wanted to raise it higher than that.

Q. Have to depart from the normal and the ordinary?
A. Yes sir.

Q. Have to incorporate water? A. Would have to, yes.

(Witness excused).

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JOHN J. FARRELL, being first duly sworn to tell the truth, the whole [trut,] and nothing but the truth, testified as follows.

Examination in Chief,

By Mr. Peterson:

Q. Your name is John J. Farrell? A. Yes sir.

Q. Mr. Farrell, you have been in attendance in court in this case, sitting back of me, haven't you? A. Yes sir.

Q. Where do you live?
A. St. Paul at the present time; my home, however, is Carver, Minnesota.

Q. Carver, Carver County? A. Yes sir.

Q. What is your business now?
A. I am secretary of the Northwest Produce Company Association of the Northwest Elevator and Manufacturer's organization of produce people.

Q. And previous to being secretary of that association, what was your business? A. Creamery business.

Q. In what capacity?
A. I was butter-maker from 1886 until 1896, in various creameries, and from '96 to 1915 I made butter in my own creamery.

Q. Where was your own creamery?
A. Carver and Shakopee, East Union.

119 Q. Private creamery, your own creamery? A. Yes sir.

Q. East Union, that is in Carver County? A. Yes sir.

Q. And you made some study of the dairy business, have you not, and the science of butter-making?

A. I usually review the books that come out on butter-making, dairy.

Q. You keep posted? A. Try to.

Q. And you had this personal experience you testified to? A. Yes sir.

Q. What official positions have you had in connection with the dairy business?

A. I held agricultural positions, such as president of agricultural societies, that is about all; former dairy and food commissioner of this state.

Q. For how long a time?

A. 1915 to August 15, I think, of '17, pretty near three years.

Q. Now, Mr. Farrell you can help us out on some of the things that we are all interested in in this case, based upon your experience and study of these matters we have been talking about here, moisture content of milk and cream of butter. In a general way about, what is the moisture content of milk?

A. It will average 86½, in some instances 87, the moisture in milk——

Q. You mean by that it is naturally there?

A. That is the moisture portion of milk, yes sir.

Q. Normally and naturally? A. Yes.

Q. The same as beef, or any other product may have a moisture content, is that what you mean? A. Yes sir.

Q. What about the moisture content of cream?

A. That will vary considerable, depending upon the fat content; the cream, the richness of it. Cream will run in fat content from 18 up to 45, and, [and] in rare cases, probably 15 per cent of fat. I should say the average moisture content in cream would be around 65 per cent.

Q. In other words, you have a variability in the butter fat? A. Yes sir.

120 Q. The cream is bought on the basis of butter fat as determined by the Babcock Test? A. Yes sir.

Q. And runs within the limits you have just mentioned? A. Yes sir.

Q. And there would be a relativity, or relation, between the amount of moisture and the butter fat?

A. Yes sir—depending largely upon local community as to that, herds of cattle in the community or the portion of the country. For instance, in the mountainous regions may have high moisture in their dairy products in the winter months than we would have, and perhaps in the mountainous regions would have less trouble in seasons of the year than we are having.

Q. You mean the food of the cattle might bear a relation to the moisture content in the milk and cream?

A. Food, water, climate conditions, breed of the [carrier], nature of the cows.

Q. So might the breed of the cattle have a relation to the moisture in the milk and cream? A. Yes sir.

Q. Will you illustrate that by the different herds?

A. This season of the year Jersey milk is usually a fatter [a fatter] milk and the globules are usually larger. Guernseys much the same, and the Ayreshire and the Holsteins are near alike, with less fat content per pound of milk, with finer fat globules in the Holstein, and the Ayreshire a trifle larger. If that is a season of the year when they are on soft [feet], it will be normally as the word may be used, a higher content of moisture, if you churn in the usual way, take herds and operate them.

Q. Then, speaking generally, the moisture content of milk from your Holsteins and Ayreshires would be larger than the moisture content of your milk and cream from Jerseys and Guernseys cattle? A. Yes sir, as a rule.

Q. So the feed and climatic conditions, the weather, and also the kind of cattle, are elements that enter into
121 moisture content?

A. Those are things that enter into this product, enter into it very largely.

Q. Now, in your experience as a butter-maker as Dairy and Food Commissioner, have you made tests or seen moisture tests showing the moisture content of butter?

A. Yes sir.

Q. Will you state to the court and the jury, in accordance with your experience, the range——

A. You mean the extreme range that I have come in contact with?

Q. Yes, having reference to butter.

A. I think the lowest one I have seen was 9 in 1 or 2 tenths of 1 per cent, as high as 21.

Q. 21 would be an extreme? A. Yes, would be an extreme.

Q. And 9 on the other side would be an extreme?

A. 9 on the other side is low.

Q. Speaking about it in a general way, not giving one figure as an average, I am not asking you for an average, and I don't want the extremes,—you have given the extremes, speaking generally and eliminating extremes, what is your range of moisture content?

A. In what class of butter, the creamery butter such as you have asked me?

Q. I will ask you the creamery butter, and I will ask you about dairy butter; we are talking about the moisture content generally. A. The bulk of them run 13 to 18.

Q. And you say that from your experience and from your actual knowledge? A. Yes sir.

Q. Mr. Farrell, is it uncommon to find a moisture content of 16 per cent or over?

A. No sir, frequently, very common. I gave you a list of 200 been analyzed by the State Department, where they run that way, as high as 19.

Q. Now you are talking about creamery butter?

A. Yes sir.

Q. Now, what about your moisture content and the range in the case of dairy butter or farm butter? By "dairy
122 butter" we mean farm butter made in the home?

A. Usually, yes sir. I have seen some analyzed as low as 8 and a fraction and as high as 23; and I have seen 18, 19, 17, 13.

Q. I will ask you this question, Mr. Farrell: Isn't it true that in the manufacture of creamery butter the tendency is to avoid the larger moisture contents than you naturally find in dairy butter? A. Certainly.

Q. It is the tendency?
A. Yes. [I] makes a weak bodied butter, if you maintain a high moisture content, makes a weak-bodied butter. Our effort is to make good butter all the time.

Q. That is not what I mean. He brought out two things relatively,—moisture content and range of it. In the case of creamery butter you have given 9 to 21, but commonly 14 to 18? A. Yes sir.

Q. And I asked you about dairy butter, and you gave larger ranges, 9 to 23 or 24. Now I am asking you whether in the making of butter as it is made in the creameries the natural tendency of the process is not that you avoid the extremes,—you avoid the extremes, the maximum, that you commonly find, or may find, in dairy butter?
A. Yes sir, it is made more uniformly.

Q. And you avoid the experiments? A. Yes sir.

Q. In other words, it is the natural tendency in a more pronounced degree, is it not, to expel more moisture than may be expelled,—that is the natural tendency to expel moisture, in the case of dairy butter?
A. Yes, that is the effort of the dairy butter-makers.

Q. I don't mean the effort.
A. Yes, expelling moisture, dairy butter will very often lose moisture, will leak out lots of water, before it is gathered up [an] analyzed; that is because of the various conditions under which it is held and churned. I presume some of it is not very well worked, and much of the moisture many times leaks out before it comes on to the market, while creamery butter is made more uniformly in nearly all creameries of the county.

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Q. But in the original manufacture, the tendency of the process in the case of creamery butter is more naturally and [certainty] to expel moisture, than in the case of making it at home? A. Oh, certainly.

Q. That is what you mean?
A. Yes sir, that is what I mean by "uniformly".

Q. So your general limits are contracted and narrower than in the case of dairy butter?
A. Yes sir, although there are these extreme ranges that exist now and then.

Q. But relatively the proportion of extreme—relatively the extremes are within a narrower compass? A. Yes sir.

Q. Because the operation is more scientific? A. Yes sir.

Q. And so may your hard—natural hard oils in Guernsey and Jersey milk and cream have a relation to the moisture content, as compared with the softer and more liquid natural oils in case of Holstein cream and milk?

A. The fat globules in the richer milk is larger and more susceptible to larger content of moisture when soft, than the Holstein.

Q. Mr. Farrell, have you heard the testimony in this case as to the way this butter was made? A. Yes sir.

Q. Assuming the testimony to be true, I will ask you if this butter appears to have been made in the usual and normal way that creamery butter is made?

A. Yes, only it is a little bit more old-fashioned than the gentlemen were speaking about. This cream wasn't Pasteurized, and furthermore it is a sweet butter, has no salt, therefore has a higher content of fat than is found in salt butter, although some unsalted butter will have equally as much. It is more—as the district attorney was speaking about—the cream was cooled and put into the churn and churned
124 —washed, salted; if [salter] and washed it is also worked, if made without salt, as the district attorney was speaking; but it is really more difficult to expel your moisture in weak butter because of no salt being in it than it is from the salt.

Q. I will ask you a little more about that, as long as you comprehended that in the answer to the previous question: Generally speaking you have butter fat content in butter, haven't you?

A. The Department of Agriculture has a regulation that is on record, but which is never enforced as to fat content,—82½ per cent.

Q. 82½ per cent? A. Yes.

Mr. Jaques: That is Wisconsin.

The Witness: Wisconsin has an enactment—I said the Department of Agriculture, the federal department at Washington.

By Mr. Peterson:

Q. Of 82½ per cent butter-fat? A. Yes sir.

Q. Well, generally speaking, what is your butter-fat content? A. Well, it is from—will you ask me the question?

Q. I am not talking about extremes, but about what is your normal butter content and your moisture content and your salt content and your [casine] content of butter,—what does butter consist of generally speaking?

A. One has an influence upon the other; 16 per cent would, if you don't salt too heavily, [being] you practically 80 per cent of fat, counting your [casine] light.

Q. Salted butter, 80 per cent fat. How much moisture?
A. 16.

Q. Or just under 16?

A. Yes sir. You will have to allow for the temperature in [casine], although we don't usually; in figuring that way 1 per cent [casine] would be 3 per cent salt.

Q. Is 1 per cent [casine] high?

A. No. It would be high for butter that is thoroughly washed. But you have to allow the extreme—very often find considerable more [casine].

125 Q. Well, then, on your figures, so far, 80 per cent butter-fat, 16 per cent moisture, 3 per cent salt, 1 per cent [casine]; that is a total of 100 per cent? A. Yes sir.

Q. And [casine] includes your solids acquired from your butter-fat? A. Yes sir.

Q. Now, this was unsalted butter here, wasn't it?
A. Yes sir.

Q. So we eliminate our 3 per cent of salt? A. Yes sir.

Q. Using that as a content of butter, as ordinarily found; your moisture stays the same, say 16 per cent, your [casine] stays the same? A. If it is washed thoroughly, yes sir.

Q. The [casine] stays the same. Is butter-fat the great food product entering into the standard and quality of butter? A. It is, yes. It is the food value of the product.

Q. And are there large amounts of butter made in Minnesota around 80 per cent?

A. Oh, yes, and over, and some under.

Q. Well, then, unsalted butter would or would not, have a relatively higher per cent of butter fat?

A. Unsalted butter has a higher per cent of fat, runs from 81 to 85,—may be an extreme case of 86.

Q. But that is exceptional? A. Yes sir.

Q. You have heard the testimony, and you have heard these moisture tests, haven't you, that have been read here?

A. And some unsalted, yes sir.

Q. Now, assuming that to be true, assuming those tests to be true, what was the butter fat content, the food value content, the butter-fat value, of this butter that is involved here?

A. The tests that I looked over ran from 80 to 85 per cent of fat.

Q. Calling the moisture test 16, just for illustration,—it is under that, according to our tests, and your [casine] 1,—there is a total of 17, isn't it? that would leave a butter-fat content of 83, wouldn't it? A. Yes sir.

126 Q. And as the moisture is under 16, your [casine] would remain the same, but your butter-fat would be up?

A. Yes sir. I usually allow 1 or 1¼ per cent for [casine], while this butter didn't appear to have that; much of this butter has 65/100ths and [75/100th] of [casine].

Q. When you used the 1 per cent a little while ago, you talked in a general way? A. Yes sir.

Q. Why, Mr. Farrell, [is] you see any reason, why do you hit this [casine] off in this butter at two-thirds of 1 per cent?

A. This is all made from cow cream, this had been ripened and thoroughly washed some of it the second time, to get the butter-milk entirely out. Because the salt has a preserving influence on the butter, and this being not salted, they naturally have to wash quite thoroughly to keep the [casine] out and to aid the keeping-quality of the butter.

Q. In other words, is the making of sweet butter, unsalted butter, a particular process?

A. No, it is made in just the same way as salted butter.

Q. I understand that. A. Only the salt is left out.

Q. But in the making of unsalted butter, putting butter on

the market, salt being a preservative, is there not occasion to more carefully wash it?

A. Yes, that is just the point I mentioned. We wash it the second time.

Q. I am asking you again,—salt is a preservative?
A. Yes sir.

Q. And where you are making unsalted butter, or sweet butter, aren't you more particular? Isn't it the natural tendency and the necessity to be more particular in the washing? A. Yes sir.

Q. Because the washing is to get rid of the [casine] and the butter-milk and the whey, the presence of which in the butter has a tendency to cause the butter to deteriorate. Is that right? A. Yes sir.

Q. Anybody making sweet butter would have a natural
127 tendency to carefully wash the butter? A. Yes sir.

Q. Assuming the testimony in this case to be true, as to the making of this butter, Mr. Farrell, I will ask you if in the manufacture of it any process or material was used with the effect to cause the absorption of abnormal quantities of water in the cream or butter?

A. I saw no process used in this creamery. I went to the creamery and looked at their churning and process.

Q. Having reference to the particular case and testimony here, as to making this butter?

A. As described by the testimony, it is the usual practice in making butter.

Q. And in the manufacture of that butter no process or material is used with effect to cause absorption of abnormal quantities of water? A. No sir.

Q. In the manufacture of that butter was it the process to expel the moisture down to under 16 per cent? A. Yes sir.

Q. Mr. Farrell, about how much water is used in the washing of the butter?

A. Usually the same amount of water as you have cream; if your churn is half full of cream when you start the churn, draw the buttermilk off, you will run in about the same amount of water.

Q. What is the purpose of washing?
A. To wash the curd [casine] and butter-milk.

Q. Is that a necessary process and proper process in the making of good creamery butter?

A. That has been the process of making butter since I can remember, and the way we made it on the farm, as well as when I was a kid, washed it too.

Q. And it is not the idea in washing the butter to incorporate water into the butter?

A. Not at all. We washed butter long before there was this law and we washed butter long before there was a moisture test.

Q. Because it was necessary?

A. Because it was necessary.

128 Cross Examination of John J. Farrell,

By Mr. Jaques:

Q. You don't claim, Mr. Farrell, that you were in the creamery when this butter was manufactured, do you?

A. No sir.

Q. And did you have anything to do with this particular butter?

A. No sir. Just happened into the creamery when it was returned, a portion of it.

Q. Did you analyze it after it was returned? A. No sir.

Q. Or have it analyzed? A. No sir.

Q. You were Dairy and Food Commissioner at that time?

A. In '18? —no.

Q. You are not a practical butter-maker, are you?

A. I made butter nine years. I thought I knew all about it when [it] was about twenty years old.

Q. You worked in a creamery then? A. Yes sir.

Q. So you are twenty-nine years a butter-maker?

A. Yes sir.

Q. Up to what time were you butter-making?

A. Up to 1915, a little bit after that.

Q. You were a butter-maker, then, after the establishment of this regulation by the Commissioner of Internal Revenue and Secretary of the Treasury, allowing a maximum of 16 per cent? A. Yes sir.

Q. Now, I notice that you use the expression that the cream being churned in the usual way. Do you mean by that the usual way at the present time, or the usual way before the regulation was adopted?

A. In my butter-making experience I don't see there is any change in handling cream.

Q. You don't think——

—A. Might grade it a little more closely.

Q. You don't think, then, since this establishment of this regulation, these witnesses are correct in saying that the whole plan or process has developed to get as close to
129 16 per cent water as possible, and not beyond?

A. I didn't understand the witnesses that way. I understood when they got it below 16 per cent stopped their working proceeding, because they claimed they were within the legal limit of the moisture regulation.

Q. You don't think, then,—I suppose, as Dairy and Food Commissioner you inspected creameries and all that?

A. I have personally inspected and been in creameries in pretty nearly every state in the Union.

Q. You don't think then there has been any change in the process of manufacturing butter since this rule was adopted?

A. I have just forgotten whether the combination churn came into the market—I believe it was about that time, or prior, that the first churn was made, combination churn, and that is about the only change that has taken place.

Q. Combination churn retains more water?

A. Why, no, retains more water without you keep it; box churn retains just as much water as a combination churn, if you don't let it out. So will a stone churn.

Q. That in your opinion is the normal water content of butter manufactured from say normal cream, August to September, 1918, and manufactured in a normal, usual way, from a scientific standpoint, would be?

A. If it is very hot weather, anywheres 13½ to 19.

Q. That would be the normal?

A. Well, I don't—that is the way it tests out, after you get through washing. I don't know just what you mean by "normal" here either. I call normal the moisture I find in the butter.

Q. I agree with you that there is not any normal here, there is too much artifice for normality to enter in. You are

familiar with the exhibit we had here, about the way this butter run when we tested at the churn?

A. Yes, I heard them read, yes sir.

130 Q. And all of the churnings were between 15 per cent and 16?

A. I think they were, although I am not positive about that.

Q. You didn't notice on that list any churning where the moisture content was 13?

A. Are you speaking of the list of tubs that the government returned, or the entire lot of butter in the car?

[A.] I am speaking of the creamery list here, Exhibit 1, showing here tests at the creamery, before the butter was shipped.

A. I hadn't [look] at that list, but I heard it read off. But I saw a list of the entire carload, and it averaged all below 16, but this is the list I think I heard both you and Mr. Peterson read off. There is nothing remarkable about this, some of this butter, when they tested it, may have been 17—18; there is nothing peculiar about this.

Q. You don't think so?

A. No sir. Because this butter, much of it, may have contained 17 per cent.

Q. This is the first test, when it was churned?

A. No, it is not, it is the finished test.

Q. The finished test at the creamery? A. Yes sir.

Q. You think there is not anything peculiar?

A. Nothing remarkable about that, because some of it may be still higher, 1 or 2 per cent higher, may be 3 per cent.

Q. Nothing peculiar about this, phenomenal accuracy, hovering around this per cent?

A. It is not finished, because the gentleman said when he got below 16 he stopped the working proceedings. There is not anything unusual about that.

Q. You think some of this may come out of the churn at 13?

A. Possibly, but hardly at that time of the year. But I don't know.

Q. If it come out of the churn in their test at 13, they must have incorporated water in it to get it up to this figure?

A. I don't know the process of sample testing there,
131 doesn't indicate it; the indication is that the first test was always higher, and worked it down until they got it below 16.

Q. Did you see the test of that butter, or the analysis of that butter that they made, after it was returned, their samples were returned? A. I didn't see it——

Q. What was this you testified you did see?
A. I said I looked over the tests of the entire carload of butter that was shipped, this 156 tubs that were returned by the government on payment of the stamp tax to this firm, and that the average content of moisture, this entire car, figured up, if I remember right—if I remember the figures correctly, 15.61. Therefore many of these tubs that was not held by the government must have been below 15.

Q. Whose tests were those? A. The factory tests.

Q. Now from your experience, Mr. Farrell, as a butter-maker will you tell us whether it is not a fact that butter-makers can absolutely control the moisture content between within one or two points?
A. That is a great deal—1 or 2 points? that is not control. I have heard a great many butter-makers say they could control it, but on analysis it was not done, it was not accomplished.

Q. They do control the water content, the butter-makers?
A. I don't know as they do. They don't control—if they use some abnormal machinery, perhaps can.

Q. Isn't it a fact in your experience in connection with creameries now, isn't there a process entirely to manufacture butter that shall not exceed 16 per cent, but shall only be a trifle amount less than 16 per cent, isn't that a regulation sometime with the creameries?
A. I don't call that controlling butter, because we find in churning butter in the regular way, that much of these churnings contain much over 16 per cent in adding the salt (This question and answer stricken out at instance of interrogating counsel.)

At this point in the trial a recess was taken to 2 o'clock p. m., June 21, 1921.

132 Proceedings of June 21, 1921. Afternoon session.

John J. Farrell called for further Cross Examination.

By Mr. Jaques:

Q. Mr. Farrell, I understood you to testify this Wisconsin law fixes the amount of butter fat?

A. I think you mentioned Wisconsin, Mr. Attorney.

Q. Do you know about that?

A. I know they have such a statute, they had for some time.

Q. What butter fat did they fix for butter?

A. 82½. Don't live up to it.

Q. And that fixes 16 per cent by statute?

A. It was 16 per cent in 1913. I guess this last [legislature] session made it 80 per cent of fat.

Q. Did they repeal the 16 per cent law?

A. No, they left that stand.

Q. Now, you say the Wisconsin statute—it was not enforced in Minnesota either?

A. I never brought a case for high moisture in Minnesota. I have looked up isolated cases and found the creamery boys had no intention of getting that in there, and dropped the cases.

Q. That is the reason you never brought any case under that law? A. Under the 16 per cent moisture.

Redirect Examination of John J. Farrell.

By Mr. Peterson:

Q. His Honor asked one of the witnesses if the temperature that was used in the churning would result perhaps in
133 the elimination of moisture down to perhaps 14 per cent, if churned long enough, and I will ask you if temperature would be one only of the different elements entering into the situation?

A. Well, that would be one of the elements, sure; the temperature is always an element. You must have your butter come firm and the temperature is the only thing that will [goven] that firmness in warm weather. But I have churned butter with the cold temperatures when I have churned a half day, with the result I had more moisture when I got

through than if I had churned at what I call regular, normal temperature. I tried to make granulated butter for the Association, under Commissioner Slater, at the State Fair. He asked me to.

Q. And an unusually low temperature would be a departure from normal methods?

A. Would never get through with our factory work.

Q. There was something in the testimony here about the moisture test being called the Irish Test. Is that a correct name?

A. That is the name of the test. A fellow by the name of Irish, that worked in the Crescent Creamery Company, when I worked for the same company,—I didn't work for the company at the same time, had a patent applied for this test. I was then running my own creamery, at Carver.

Q. When he was perfecting that, did you cooperate with him, and did he cooperate with you?

A. Yes, he came out there and used shot first,—had them weighed on a druggist scales, used No. 1, 2, 3,—No. 1 shot for grams, he finally perfected it, and had the weight, the grams, made the same as the druggist uses, and perfected his test; then the Turnbull people, who make scales, completed the scales, or had them build a scale for them. I believe since that time the scales has been proved and graduated, giving the per centages; in fact I know the scale has been proved.

Q. That scale and that Irish test are the methods com-
134 monly in vogue in creamery tests of moisture content?

A. Yes, most of butter makers, I think, in different states use that test today.

Q. Not only in Minnesota, but other places? A. Yes sir.

Q. How long does that process take? A. Well, five, six or seven minutes, depending on the operator he thinks in his judgment he will emulsify the sample, how quickly he will take it out of the churn.

By the Court:

Q. I understood you to say that you were making butter as far back as 1886 down to 1915? A. Yes sir.

Q. This law of congress, under which this case is being brought, or that is involved here, was passed, as I recollect, in 1902. A. Yes sir.

Q. Now, prior to 1902, was the churning in creameries done at practically the same temperatures as used after 1902? A. Yes sir.

Q. No changes in the temperatures used, as far as you know?

A. Well, there is some changes taking place in the controlling of temperature since the advent of the art of refrigeration; some creameries have that installed; then the variation in temperature used to be in hot weather rising over night, and in cold weather would go down——

Q. Is there any attempt now to make a change in the butter content, by making the change in the temperature?

A. By the composition—the butter composition, I don't believe so, sir.

Q. As far as you know? A. No.

Q. Well, how about the actual water content in the butter prior to 1902, and since 1902, made in the creameries?

A. Prior to 1902, I believe there was no butter-maker in the country that had a moisture test, and we paid no attention to it, so we— But I can say in this way, from my observation in looking backward, as I can easily see, I had low moisture and very high moisture.

135 Q. Ranged as high as it does now? A. Yes.

Q. Well, I think you said that the combination churn had been introduced since 1902?

A. No, I believe I said that I didn't know just when the year the combination churn came in; I think along about 1894 or '5.

Q. So that was in vogue prior to this 1902 law?

A. Yes sir When I went into the creamery business myself, in 1896, I bought the Victor churn. It is a 4-roll churn.

Q. Do you know of any changing in the process of butter-making that has taken place since 1902, that would have a tendency to increase the water content in the butter?

A. No sir.

Q. You don't know of any?

A. No—no process taking place that would have a tendency—such a natural product, it is pretty hard to govern it.

By Mr. Peterson:

Q. Mr. Farrell, can you give us a statement in regard to the butter industry, as it was just prior to the enactment of

the law of May 9, 1902, and the purpose of the enactment of that law, the status of the industry and what it was intended to meet?

A. From the period of time I began to make butter up to 1902——

Mr. Jaques: A theoretical thing altogether.

The Court: I suppose he is simply giving us what his understanding is.

The Witness: From 1886 and before that time, a great many people in this country was in the habit, and are still in the habit, only not so many of them, of collecting farm butter, as the women on the farms make the most of that butter, or a great portion of it is consumed upon the farm, and the balance sold to the local storekeepers and local people in that community, and the villages use a certain amount of that, say the better part of it, or the balance of it, and the
136 balance is bought up by commercial people in the ladling business, some of them at that time in the renovating business, or packing stock,—that is what farm butter is called after it has lost its identity—either renovating process or legalized by congress,—pay a quarter of a cent a pound to take out a license, that is, by making the butter into oil; but these other people that bought up and used to buy this stock up and take it into their place, and they would add sometime incorporate with their salt, in some cases use fillers and clay and [earthenward], a clay-filler socalled, soak it up and get a large percent of moisture, called blended butter, same as the English butter, not quite, and these fellows would come back into the country and make strong competition for men buying the butter and putting it into renovated butter, consequently fellows in the renovating business had this law passed by congress to do away with this practice of soaking the farm butter, putting in large percentage of moisture and putting in fillers in it—[and] illegal practice; there is not a factory in the country qualified under that act, nobody licensed under that act.

Q. Is it your understanding that these words "absorption of abnormal quantity of moisture" had reference to their putting of packers stock in the tanks to soak up water?

Mr. Jaques: Objected to—a question of law. Don't have any relation to renovated butter.

The Witness: A. Yes sir.

By Mr. Jaques:

Q. Well, of course, this moisture content would apply to renovated butter as well as to creamery butter?

A. Ruling of the department has been promulgated; they apply to anything now in the shape of butter that they can find that is 16 per cent moisture.

137 Q. You don't think they ought to?

A. Why certainly, that is what has [bought] all this trouble,—we would be making butter in the good old way.

Q. You would be making the butter 14 per cent moisture?

A. And be making it higher.

Q. It is your idea then that the consumer ought to pay for 16 lbs. of water in every 100 lbs. of butter he buys?

A. The consumer is able to take care of himself, and he pays for it in flour and many other products that has more——

Mr. Peterson: Objected to. On the [fact] of the record the butter in question contains 83 per cent of butter fat, which is more than unsalted butter.

Mr. Jaques: There are other elements besides butter fat and water.

Redirect Examination of John J. Farrell,

By Mr. Peterson:

Q. This statement of the industry and the manufacture of blended butter and the soaking up of water in tanks, it is the last portion this law, the portion that is involved here, that had reference to that system?

A. Yes sir. It says, "Any different lots or parcels of melted butter——" You have got three parts—under section 4, of any act of May 9, 1902.

Mr. Jaques: I suppose the Court has the law before him.

Mr. Peterson: I just want to inquire if I understand the witness correctly; There are three kinds of butter defined in section 4, aren't there,—the first one has reference to the addition of an acid or an alkali—foreign substance, and

138 with the idea of deodorizing or removing [rencidity]; and you have got a second classification, about adding a foreign substance, in the case of renovated butter, and this last situation, about the absorption of water.

Q. I am asking you if that portion of the law had reference to and was intended to meet this renovated butter process you have talked about, where it was soaked up in tanks? A. Most assuredly.

Q. That portion of the law was not intended to meet what you call the renovated butter?
A. Not the law, but the regulation now applies to renovating; the law didn't apply to renovating.

Q. This process and absorption of abnormal quantity of water had reference to the blended butter that is kept together and stored in tanks to soak up water? A. Yes sir.

Q. And it stopped that business?
A. Yes sir, mighty quick.

(Witness excused).

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SCOTT E. FORGY, being first duly sworn, to tell the truth, the whole truth and nothing but the truth, testified as follows, on behalf of plaintiff.

Examination in Chief.

By Mr. Peterson:
Q. Where do you live? A. In St. Paul.

Q. And what is your business?
A. Foreman at the Tilden Produce Company.

Q. Foreman of the—— —A. Butter department.

Q. Have been since February 1919?
A. I made butter there for about seven months. Since that time I have been foreman.

139 Q. Were you working there in August and September, 1918? A. No sir.

Q. Now, his Honor asked this question:—have you had any special education in dairy schools?
A. No, it is all practical experience.

Q. But you claim to know——
A. With the assistance of such books as I have been able to get hold of.

Q. That is your business, and that is your profession?
A. Yes sir.

Q. His Honor asked this question of one of the witnesses, and it was of interest to all of us,—After the butter is churned and the granules appear, you wash the butter, turn on the hose, regulate the temperature of the churn and wash the butter milk out? A. Yes sir.

Q. His Honor asked the question what effect that had upon the relative constituency of the water, what effect it had upon the water content, before and after. I will ask you if you made experiments to ascertain what effect washing the [produce] has upon the amount of water, after washing,—upon the amount of moisture content in the butter after the washing, as compared with the amount of water in the butter in its granular state, after it is churned, and before the washing?
A. You mean from the granular state to the finished product, the difference in moisture content?

Q. Yes, or before and after washing?
A. Before it is washed it contains more moisture than it does after washing.

Q. Have you made any experiments to determine that fact? A. Yes, I have some, different times.

Q. And you say, do you, that the normal, or the water content in the butter, before washing, is higher than the water content after washing? A. Yes sir.

Q. And have you any figures in your possession showing the actual? A. I have three lots that I run today.

Q. You may refer to them.
A. I have three different churnings. Two of these churnings were made out of the same vat of cream, one
140 with a granule moisture content of 70.1, and washed it, had a moisture content of 15.8, and when it was finished, salted and finished, 15.4, and the other one, this out of the same vat of cream, the second lot in the granule had a moisture of 18.4, and when it was washed moisture of 16.5, and when it was finished in the [sale], 15.6; and the third one—this is a different lot of cream, churned at the same temperature as the other, and contained 21.6 moisture in the grain, and I may add that these grains were a little smaller than the grain of the other butter,—17.1 when

washed, 16, when salted and finished. But I have had tests on granulated butter go higher than that before.

Q. The granulated butter, you mean the test before the washing? A. Yes sir.

Q. You made these today?
A. Just—been quite a while since I checked.

Q. You made that in part to ascertain the fact, because the question had been raised, did you? A. Yes sir.

Q. Now, I will ask you if those findings corroborate generally the other findings that you made covering the same experiment?
A. Yes sir, they are practically the same. I have had some higher and some lower.

Q. Yes, but generally speaking, does the washing have the effect of leaving a less moisture content than not washing—that was there before?
A. You couldn't expel all that water and curd, that is curd that is in there before it was washed, unless you washed it—it seems like the cold water that is put in there washed a certain amount of that out.

Q. That is all right, but that is not quite the question: Do the other experiments that you have made corroborate generally the finding in accordance with these three to the
141 effect that your moisture content is less after washing?
A. Yes sir.

Q. Give me the reason for that.

Mr. Jaques: Everybody admits the washing of butter is to get out the butter milk—be a good deal less afterward, if properly done.

The Court: The water content is less after washing?

Mr. Jaques: Yes, it is intended to make it less.

Mr. Peterson: I think you are shifting your position.

The Court: If that is understood.

Mr. Jaques: That is what my mother washed it for, to get the stuff out, to get it clean.

Cross Examination of Scott E. Forgy,

By Mr. Jaques:

Q. What kind of a test did you use? A. Irish test.

Q. How many analyses have you made with that Irish test, yourself? A. Something over ten thousand, I suppose.

Q. How accurate is that test, have you figured on that?
A. I have checked with different chemists, and there is sometimes a variation of half a point, either way.

Q. What do you mean, half a per cent?
A. Half a point of moisture, half of one per cent.

Q. What was the temperature? A. 48.

Q. And the water used in washing, what temperature?
A. 50.

Q. What is the temperature of the water, as it comes from the well down there at the factory at the Tilden Produce Company? A. I think it is around 50.

Q. Around 50? A. Yes sir.

Q. It is not a lower temperature than that, coming from the well?
A. I don't know for sure, because I never tested coming from a well.

142 Q. Did you heat this water?
A. No, it goes through a tank sometimes, and will be a little bit warm. If warm have to let it out until you get water sufficiently cool.

Q. Take it from a tank that has been out of the well for some time. But you don't heat it? A. No.

Q. Have you those samples yet that you took, so that you could submit them to the chemists?
A. No, I have not, but anybody can come down and take a sample.

Mr. Peterson: Anybody can go over to the creamery and make the same experiments, inspect the creamery, do anything you want to. (To Mr. Jaques).

(Witness excused).

L. G. NUT, being first duly sworn to tell the truth, the whole truth and nothing but the truth, testified as follows,

Examination in Chief,

By Mr. Peterson:

Q. You are the party that wrote this letter of November 19, 1918, to the Tilden Produce Company? A. Yes sir.

Q. I didn't know you were here when I found the letter. Now that letter is in evidence, and refers both to claimed liability for stamp taxes on the 9,360 lbs. of butter, and also what is called the Special Tax, it makes reference to that?
A. Yes sir.

Q. The Stamp tax was assessed, and is what is involved here?
A. The stamp tax is the amount involved in this suit.

Q. The stamp tax was assessed, wasn't it?
A. That is my understanding. The taxes are assessed in Washington.

143 Q. Now, the special tax was not assessed, was it?
A. The special tax was inserted in my report; I inserted the special tax, with the 50 per cent penalty.

Q. But it was never assessed?
A. Well, examining the Washington file here——

—Q. Answer "Yes" or "No", if you can. As we understand it it was never assessed. Is that your understanding of it?

Mr. Jaques: What you know about it would be this record, or hearsay.

The Witness: I can't answer "Yes" or "No". Here is a letter I identify, signed by the deputy commissioner.

By Mr. Peterson:

Q. Answer my question, if you can. Was the special tax assessed as far as your files show, as far as you know?
A. I don't know.

Q. Don't know whether it was or not?
A. No,—not since I have read this Washington file.

Q. It appears not to have been assessed, doesn't it, Mr. Nut.

A. It appears from this letter that they were asked to show cause why it shouldn't be assessed.

Q. You needn't read the letter.
A. It is a letter that is signed by the deputy commissioner, whose signature I identify, and in which it states that the company be informed of their privilege——

Q. You needn't read it. Was the special tax assessed, or wasn't it? A. I can't tell you, sir.

Q. You can't tell?
A. I can tell you who can tell you, though.

Q. I am asking you.
A. Send it over to the collector's office; he can tell you.

Q. Will you call up and find out?
A. It is not the function of our office to assess taxes; that is the function of the Washington office.

Q. You are the supervising agent?
A. It was my belief it hadn't been assessed, until I read that letter before lunch.

144 Q. You still believe it? A. I am not so sure about it.

Q. Well, we never were asked to pay it. This stamp tax was assessed by virtue of the 16 per cent regulation?
A. Yes sir.

Cross Examination of L. G. Nut.

By Mr. Jaques:
Q. What does yours call for by the regulation?
A. Why, it is the regulation that guided us in our investigation.

Mr. Peterson: Under color of the law.

The Court: Purported to be in accordance with the law?

The Witness: Purported to be a regulation promulgated under section 20, authorizing it.

(Witness excused).

Mr. Peterson: We rest!—with the privilege of putting that (section 20?) in the record.

Mr. Jaques: Before resting, want to recall for re-cross examination Mr. Radke.

ARTHUR L. RADKE called for Recross Examination.

By Mr. Jaques:

Q. Mr. Radke, were you employed by the Plato Cooperative Creamery in the year 1918? A. Yes sir.

Q. Did you make a considerable quantity of butter during the month of August of that year containing not over 13½ per cent water?

145 Mr. Peterson: Objected to as immaterial, and already covered by the testimony, as far as it bears upon the question of control of moisture content, otherwise it is immaterial.

The Court: He may answer.

Mr. Peterson: Exception.

The Witness: A. I have the record here to show whether I did or not. I don't remember just exactly whether I did.

By Mr. Jaques:

Q. You don't know whether you did? A. No sir.

Q. You don't know that you made a large quantity of butter during that year? A. Tested just below 13?

Q. 13½, below: A. Wasn't that the——

Q. I am asking you about what butter you made.

Mr. Peterson: It is admitted the Plato Cooperative Creamery Association made some butter for the Navy, upon their specifications, whatever they were, and Mr. Farrell tells me the specifications were 14½ per cent at that time.

By Mr. Jaques:

Q. You know Mr. Storvig? A. Yes sir.

Q. Now, Mr. Storvig was inspector there while you were making that butter 13½ per cent?

A. The fellow was inspector there was named Miller.

Q. Storvig was not there in 1918?

A. I think Storvig had charge of the department.

Q. He was [theretoo,] wasn't he, inspected all this butter?

A. Mr. Storvig?

Mr. Peterson: It is admitted.

Mr. Jaques: We are asking questions.

The Witness: He didn't inspect no butter at the creamery, not to my knowledge.

146 Q. It was not made under his supervisions?
A. It was made under his supervision, but inspected by Miller and Hughes.

Q. You succeeded in making a large quantity of butter at this low moisture test regularly, day after day?
A. We didn't churn all our butter.

Q. Can't you answer the question directly, you succeeded in making this considerable quantity of butter 13½ per cent, during the year 1918? A. I think it was 14½.

Q. All right, 14½. What change in your process did you make, in order to make it that lower moisture content?
A. If we were over the limit, simply work it down.

Q. You mean run it up to 16 per cent and work it down?
A. [Id] is not necessary to run it up to 16 per cent.

Q. You didn't have any trouble in keeping it at 13½?

Mr. Peterson: Objected to, no foundation laid for that question, it appearing in the specification it was 14½ per cent, and he eliminated moisture until he got down to that.

By Mr. Jaques:
Q. I want to know whether by altering the process——
A. The only alterations we did, if not 14½ per cent, work it down to 14½ and below.

Q. What change did you make to reduce the temperature of the cream? A. Would cool it down lower.

Q. Then you reduced the temperature of the water you washed it with? A. Not necessarily.

Q. But do you know whether you did or not?
A. We did sometimes.

By Mr. Peterson:
Q. In other words, you worked some more moisture out of it, in order to come down to the specification? A. Yes sir.

Q. And then the inspector would only select for the Navy those ones that showed a moisture content of 14½?
A. Yes sir.

147 Q. And there was a good many that were above that?
A. If there were a good many above that, we shipped them to the Philadelphia market.

Q. It was a question of selecting those that were 14½?
A. Yes sir.

Q. That is the kind they wanted?
A. That is the kind they wanted.

By Mr. Jaques:
Q. Stating it another way, you reduced the temperature of your cream and your wash water and kept it down to 14½?
A. Reduced the temperature of the cream in order to get a firmer body, in case over 14½, so I could work it down.

Q. You reduced the temperature of the cream so you could get a firmer granule produced of butter so it would not absorb so much water?
A. In case it was over the limit, so that I could work it down.

By Mr. Peterson:
Q. Some of that 14½ per cent moisture butter might contain less than 83 per cent of butter fat, might it not?
A. Might.

Q. It was salted? A. It was salted.

(Witness excused).

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Mr. Peterson: Plaintiff rests, with the permission to include in the record whether or not the special tax was imposed upon the Tilden Produce Company as a manufacturer.

Mr. Jaques: So far as this is concerned, this tax involved in this case is the stamp tax, and I understand the manufacturer's tax is never levied—assessed.

Mr. Peterson: That may be understood. Judge Morris has held the stamp tax only applies in cases where the
148 special tax as a manufacturer is imposed. In other words, the theory of the law is that the stamp tax obtains in the case of one specially taxed or licensed as a manufacturer [or] adulterated butter, which of course we are not.

Testimony Behalf of Defendant.

EDWARD M. MARCY, being first duly sworn to tell the truth, the whole truth, and nothing but the truth, testified as follows, in behalf of the defendant.

Examination in Chief.

By Mr. Jaques:

Q. Where do you live, Mr. Marcy?
A. I live in Oak Park, Illinois.

Q. How long have you lived there? A. Four years.

Q. Are you in government employment? A. I am, sir.

Q. And were you in November, 1918, were you in government employment then? A. Yes sir.

Q. In what capacity? A. Deputy Collector.

Q. Located in Chicago? A. Located in Chicago.

Q. Working under whose direction?
A. Supervising Agent at that time.

Q. Mr. Nutt? A. Mr. Nutt, yes sir.

Q. You are familiar with the butter that is involved in this case, are you, Mr. Marcy? A. Yes sir.

Q. In the performance of your duty did you have anything to do with that butter in Chicago?

A. I assisted taking the final samples of this butter
149 in question.

Q. And what warehouse in Chicago, or cold storage, was it? A. 1526 South State Street.

Q. How many samples did you take from those tubs of butter? A. I assisted in taking 171 samples.

Q. And from the tubs was that you took the samples?
A. From the tubs, yes sir.

Q. What were the sizes of the tubs? A. 60-lb. tubs, full.

Q. Whose butter was it?
A. I understand the Tilden Produce Company, of St. Paul.

Q. What did you do with the samples, after you took them?

A. Took them back to the office and prepared them for shipment to Washington.

Q. How did you prepare them?
A. By labeling them, in cans, after they were sealed and placed in cans, placed the label on the cans, placing the initial on the label, and also on the head of the can and also the date on the head of the can on which they were cut, then wrapping them into cartons—sealing them, mailed to Washington.

Q. They were mailed? A. Yes sir.

Q. To whom at Washington?
A. Commissioner of Internal Revenue.

Q. Whose care? A. The Chemistry Division.

Q. Could you identify these samples?

Mr. Peterson: You can. I am not making any fight on the formal proof. Put this testimony in as rapidly as you care to.

By Mr. Jaques:
Q. I show you Exhibit 2. Can you testify whether that is one of the samples that was taken from this butter in Chicago? A. They are my initials on the label.

Q. And shipped to the Commissioner of Internal Revenue?
A. To the Commissioner of Internal Revenue, Washington, D. C.

150 Q. In care of the Laboratory or Chemistry Division?
A. Chemistry Division.

Q. How were they packed?
A. My initals are on them, on the can also. How are they packed?

Q. Yes.
A. Do you mean in the cartons, by wrapping each can in a small piece of paper and placing them in cartons. I think at that time we used each—eight cans for each carton, and sent by U. S. mail to Washington.

Q. The whole 71 samples? A. 171 samples, yes sir.

Q. Now, the whole 171 samples were marked identically as this one Exhibit 2 is marked? A. Yes sir.

Q. And numbered? A. And numbered.

Q. Did they have a distinctive number?
A. The number that is placed on this can corresponds with the number that was placed on the butter tubs from which it [can].

Mr. Peterson: It is admitted 171 samples, made up similar to this, were taken from the Tilden Produce Company and mailed to Washington.

The Witness: Lot 91,313, yes sir.

By Mr. Jaques:
Q. You have seen all those samples and examined them here in court? A. I have, sir.

Q. And they are here. Now can you explain to the court and the jury your method of taking [thoses] samples?
A. I can, sir.

Q. You may do so.
A. By placing a tub of butter, as we call it, upon a stand, and the cover is then removed, and we take a V-shaped piece of butter, weighing about 14 ounces, one from the top and the other from the bottom, on opposite sides of the tub, one above the center and the other below the center.

Q. Now, in doing that, you followed the regulations of the department?
A. The regulations of the department, yes sir.

151 Cross Examination of Edward M. Marcy,

By Mr. Peterson:
Q. Well, this taking of samples, the idea of that was to get a composite sample from the top of the tub, middle of it, and the bottom? A. Near the top and one near the bottom.

Q. And one near the middle?
A. No sir, one sample from each one, one one side of the tub and one on the other, one taken up near the top and the other down near the bottom, on the opposite side.

Q. But I thought you said something about a triangular sample, a three-party? A. V-shaped sample.

Q. Taken in the way you have said? A. Yes sir.

Q. From the side near the top, and from the other side, near the bottom?

A. Yes sir. If you wish to—side means one of the opposite side of the tub——

Q. One portion of the sample taken somewhere near the top and the other portion near the bottom?
A. Yes sir, on opposite sides, yes sir.

Q. And there were 171 of these that were taken and sent on to washington? A. Yes sir.

Q. And you intended to take them as fairly and accurately as you could? A. Yes sir.

Q. There were 350 tubs there. I don't understand about the difference between three hundred and fifty and 171. Did you take a preliminary test? Did you make preliminary tests and go clear through the other in the lot?
A. Preliminary tests were taken, yes sir.

Q. And 171 were sent on? A. 171 were sent on.

Q. And the preliminary tests showed a moisture content under 16 per cent? A. I understand they did, yes sir.

(Witness excused)

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152 JAMES M. DORAN, being first duly sworn to tell the truth, the whole truth, and nothing but the truth, testified as follows, on behalf of the defendant.

Examination in Chief.

By Mr. Jaques:

Q. Your full name, Mr. Doran? A. James M. Doran.

Q. Where do you live? A. Washington, D. C.

Q. How long have you lived there? A. About 14 years.

Q. What official position do you hold?
A. I am chemist, employed by the Commissioner of Internal Revenue at present.

Q. How long have you been——
—A. At present in charge of the Internal Revenue Bureau.

Q. You are head of the chemical work? A. Division.

Q. Washington. Where did you get your education as a chemist? A. University of Minnesota.

Q. How long ago? A. In 1907.

Q. You lived in Minnesota at that time? A. Yes sir.

Q. Been working at that. Does your work in the chemistry department—is it exclusively butter, or on all lines?
A. On all lines, commodities covered by internal revenue tax laws. A part of it has to do with butter and oleomargarine.

Q. How many chemists do you have under you?
A. There are at present 18 chemists in the Washington laboratory, and we have a number of men in the field, about a dozen men in the field.

Q. Have you been working on butter tests all that time that you have been there, Mr. Doran?
A. During the greater part of the time, up until a year ago I was making tests of butter at various times. I expect I have examined a good many thousand samples of butter in the course of the last twelve or thirteen years.

Q. Did you receive from Chicago the 171 samples that
153 have been mentioned in the case here? A. Yes sir.

Q. Is that one of them, Exhibit 2?
A. Yes, that is Can No. 1, the first of this series, received by mail on November 8, 1918, in the regular shipping carton that is furnished for the use of the officers in taking samples of this character, received by mail, sealed up and the mark on showing they were received—consigned from the supervising agent, Chicago, Mr. Nutt.

Q. Did you analyze those samples? A. I——

—Q. Or cause them to be analyzed?
A. I personally examined two-thirds of them, I should judge. The remainder were examined by Mr. Valear and Mr. Beyer.

Q. When you say "examined"——
—A. Tested for moisture content.

Q. What method?
A. We use the what is known as the "Official" method for determining moisture that has been adopted by the associated chemists, known as the official regulation chemists, comprising the department of agriculture, the various state

dairy and food departments, and the state experimental stations. It is a chemical evaporation method, and is the most accurate method of determining the quantity of moisture in butter. It consists—rather the method—is comparatively simple, similar to the Irish test, so-called, described here in court: You weigh out a dish,—get the weight of the dish empty, and into that dish you weigh one-half or two grams of the butter to be tested, after having thoroughly mixed or emulsified the butter in the tin can, and be sure you get a uniform sample—homogeneous. That mass of butter is accurately weighed, and heated for two hours, at a temperature of boiling water, in a controlled [ovem]; it is then cooled, weighed, and again placed in the oven for a half hour, taken out, cooled, and weighed again, and if there is no loss in weight in the second heating it is evidence that the moisture has all been driven off; then make a final weighing, and the loss or evaporation is the amount of moisture that is contained in the sample,—the per cent is gotten by cal-
154 culation. That is the method that was used in analyzing these samples for moisture.

Q. Can you give us the result of the tests that you made—laboratory number?

A. These are numbered serially, ranging from No. 1 to No. 171. I can start and read the percentage of moisture.

Mr. Peterson— If you have a tabulation of them.

The Witness: I have no tabulation, other than these original memoranda that were made at the time of the analyses.

By Mr. Jaques:

Q. Read them.

A. 17.6, 17.87, 16.29, 16.83, 16.35, 17.62, 16.38, 16.14, 16.01, 17.77, 16.43, 17.27, 16.91, 15.69, 16.95, 17.67, 16.31, 17.63, 16.10, 17.80, 16.73, 17.33, 16.26, 17.49, 16.97, 16.47, 16.56, 17.33, 16.98, 16.44, 17.72, 17.08, 16.35, 17.36, 16.61, 17.40, 16.80, 17.74, 17.21, 17.64, 17.48, 17.46, 16.44, 16.56, 17.16, 16.93, 16.02, 17.08, 16.24, 17.11, 16.72, 15.77, 17.09, 16.52, 17.09, 16.09, 16.60, 17.48, 17.19, 16.79, 16.01, 16.57, 17.89, 16.44, 16.59, 17.72, 17.10, 16.02, 16.57, 16.92, 17.36, 16.39, 16.08, 16.79, 16.79. Now the next 50 samples were analyzed by a chemist by the name of Mallory, who has left the service.

Mr. Peterson: If you have the record you may give them.

The Witness: I have the record, in his original handwriting.—(Reading) 16.76, 16.21, 17.43, 16.90, 16.31, 16.67, 16.52, 16.22, 15.94, 15.81, 17.05, 17.35, 16.63, 16.99, 16.43, 16.47. The next series of 15 samples were analyzed by Mr. Beyer, who is here in court, but starting in with No. 109, I have examined——

—Mr. Peterson: It is admitted.

The Court: It seems to me this is taking up a lot of time, and I don't think the jury can remember all those figures.

155 Mr. Peterson: Or the papers themselves can be left as exhibits.

Mr. Jaques: We can have a tabulation made.

The Witness: There was an average made here. I don't see the figure, but my recollection is 16.76.

Mr. Peterson: If he (the witness) will say that is a copy——

The Witness: That is a copy of the regular laboratory report, on the Commissioner's stationery.

Mr. Peterson: If it is, that may be used in lieu of the original.

The Witness: This is a copy of the regular laboratory report that was made officially at the time the analyses were completed.

Mr. Peterson: And it is correct, as far as you know?

The Witness: It is correct as far as I know. And that report was copied from this original data.

Mr. Jaques: Offer in evidence Exhibit 3, the laboratory report of this butter, of the 171 samples you referred to.

Mr. Peterson: No objection to the copy, it appearing that the witness says it has been compared, and is accurate to the best of his knowledge and information.

Mr. Jaques: I want to say that I made an admission about the stamp tax. So far as it goes it is correct. The money sued for here is the stamp tax, not a manufacturers tax, but the manufacturer's tax was assessed and paid.

Mr. Peterson: Then I labored under a misapprehension. Later on we can correct the record on that. The records

that were furnished to me merely showed payment of the stamp tax, and generally should be involved here.
156 If it was paid, Your Honor, the law point in my reference to what Judge Morris held, of course, would be out of the case. Our record shows this was not paid. This may refer to something else.

The Court: When you find out what the facts really are, you can stipulate and have it go in the record.

(By Mr. Jaques:

Q. Are you familiar with the literature and statistics on the subject of normal content, moisture content, in creamery butter? A. Yes sir.

Q. What has been your experience along that line, Mr. Doran?

A. Why, the Internal Revenue laboratory has compiled all the various statistics—reliable statistics, on moisture content of butter; has made several independent investigations on general market butter, with a view to determining what is the normal moisture content of butter, as it is generally marketed. That work started when the law was passed, in 1902. I personally was not connected with the department at that time, but the records are there, and in that first year the laboratory—in the laboratory examined some 30-odd samples of creamery butter, and also country, or dairy, butter, taken at random.

Mr. Peterson: 30 samples?

The Witness: I think the first examination was about 30 samples. I wouldn't say definitely. The creamery butter averaged about 13, and the country butter 12-and-a-fraction. I am unable to quote the exact figures, but it was less than 13½. During that same year, following out this——

The Court: What year?

The Witness: 1902.—That same year the Department of Agriculture conducted some pretty exhaustive tests on general market butter of the United States, to determine
157 what the normal moisture content was, and that—the result of that investigation was published as Bulletin 39, Internal Revenue Circular Bulletin 39, Department of Agriculture. I believe there was some 700 samples taken, representing three or four hundred creameries, and a dozen or more states. The average shown there was 11.57. In

1911 and '12, the Bureau of Internal Revenue conducted an independent investigation on market butter, and Revenue Agent Nutt, at that time stationed at Pittsburg, having charge of Western Pennsylvania and Maryland and Western New York, sampled butter on the Pittsburg, Buffalo and Baltimore markets. I believe he took about 250 or 260 samples, made in a great many states,—all the principal butter-producing states. The average moisture test was 13.7, as near as I recall, and I believe there was only one sample exceeded 16 per cent moisture. During the same year, Mr.——

—Q. This is all creamery butter?

A. This is all creamery butter, not dairy butter. During the same year the Department of Agriculture published another bulletin on the normal composition of American Creamery Butter, as a result of some 700 tests, or 695, I believe, in that bulletin, from 700 creameries, about 18 states. The average moisture content was shown to be 13.9, some 2 and three-tenths greater than 1902, also confirming the results of the Internal Revenue Bureau's investigation, of the same year, that the moisture content was then running a little over 13 per cent. The University of Illinois, in 1907, did some very extensive work in investigating market butter in Chicago, and as a result of some 700 tests, they found an average moisture content of about 13.57.

Q. When was the regulation spoken about in this case adopted?

A. They were adopted, effective with the effective date of the law, which was July 1st, 1902. The act was approved May 9, 1902, to be effective July 1st.

158 Mr. Peterson: Counsel is inquiring when the regulations were promulgated.

The Witness: The regulations were promulgated between May 9, 1902, and July 1st, 1902, as accurately as I can determine.

(By Mr. Jaques):

Q. Go ahead with your statement.

A. We have from time to time examined butter, where the agents would conduct a general sampling of the cold storages in the course of the inspection of butter, and as a result of those tests we have found that there has been a general increase in the moisture content over a period of years; the

general level has been rising. During the last three years we have not conducted what you might call a general investigation, so I am unable to state what the present condition is.

Mr. Peterson: The last one was taken three years ago?

The Witness: I think it has been about three years since we had any of these general samples tests.

Mr. Peterson? 1908?

The Witness: Yes sir.

(By Mr. Jaques):

Q. Are you familiar, Mr. Doran, with the Pennsylvania report, Department of Agriculture, 1898?

A. Yes, I am familiar with the article. That was an article on the moisture content of butter, written by Major Alford, who later on was the head of the Dairy Investigation Department of Agriculture. That statement—I wouldn't attempt to quote that article. I have read it a number of times.

Q. That is, the book containing that report?

A. That is—this is the book, yes.

Mr. Peterson: I don't think that is the way to prove it.

(By Mr. Jaques):

Q. You have there in your hand the Pennsylvania Re-
159 port for 1898, in regard to moisture content of butter?

A. Yes sir.

Q. And you are familiar with that book, and that report?

A. Yes sir. I have been over it several times.

Q. Does that give the statistics?

A. An article by Major Alford, Chief of the Dairy Division, Department of Agriculture, Washington, D. C., entitled "The Composition and characteristics of Butter". He makes the statement that the average composition——

—Mr. Peterson: Plaintiff objects to the reading of the report by the witness, on the ground it is improper examination, and no proper foundation has been laid for it—for the introduction of the evidence, or the reading of it from the report.

(By Mr. Jaques):

Q. Was that issued as a Bulletin of the Agricultural Department?

A. No, that is a publication of the State of Pennsylvania, Department of Agriculture, the report of the secretary, Fourth Annual Report of the Pennsylvania Department of Agriculture, 1898.

Mr. Jaques: I can offer Alford's statement here, take the statistics here in evidence. What page is that?

The Witness: Page 560. of this book.

Mr. Peterson: Objected to as immaterial on the state of the record, and incompetent, irrelevant and immaterial, no proper foundation laid for the question, not having anything to do with the law imposed by the Act of May 9, 1902.

The Court: If the objection is made, I think the foundation hasn't yet been laid for its introduction.

(By Mr. Jaques):

Q. This book is the official report of the Department of Agriculture of Pennsylvania?

A. The report of the Secretary of Agriculture of the State of Pennsylvania.

Q. And it contains this statement of Major Alford,
160 Major Henry Alford, Chief of the Dairy Division of the United States Department of Agriculture, Washington, D. C., page 558 to 569, containing statistics as to moisture content of butter as rising from experiments or tests of Major Alford? A. Yes.

Mr. Jaques: Offer in evidence that statement.

Mr. Peterson: Objected to, no proper foundation laid for the offer.

(By Mr. Jaques):

Q. Is Major Alford considered as authority on this subject of moisture content of butter?

Mr. Peterson: Same objection, the witness being the witness of the government, and not cross-examination; in other words, affirmatively one can not prove what the authorities are—to test the credibility of the witness he may be inquired into on cross-examination as to what the authorities said.

Mr. Jaques: I suppose I may ask the witness whether he is familiar whether Alford is an authority on the question.

The Witness: Major Alford was, I think, the earliest investigator on the question of moisture content in butter,—work that he undertook incidental to his work as Chief of the Dairy Division Department of Agriculture. He is considered an authority.

Mr. Peterson: The same objection, the witness appearing to be the witness of the government, and no foundation laid showing the authenticity or identity of the work in any event.

Mr. Jaques: I am not sure on this proposition. It was a scientific work, under tests made by an authority upon the subject in hand, and if—I suppose all the foundation was laid that can be laid.

161 Mr. Peterson: I think that is correct.

Mr. Jaques: I wouldn't want it to go off on any technicality. If the Court thinks foundation can't be laid for the introduction of that, I don't of course——

The Court: I think the objection, if insisted upon, will have to be sustained.

(By Mr. Jaques):

Q. Now, Mr. Doran, as a chemist, have you ever made tests that would enable you to determine whether the water content in butter, finished butter, is the water—is the same water content as is contained in cream from which it is made?

A. Yes, we have made a number of such investigations and experiments, with a view to determining what change, if any, took place in the water of washed butter. We procured samples of the butter before washing and after draining all the extraneous moisture from it, melted it and separated the water and [casine], then took samples of that same butter after it had been washed in the churn—washed away—or drained off, the extraneous moisture, melted it, and separated that water and [casine], and found, in all cases, that the original water or menstrum of the cream, had been replaced in part by the wash water, which was evidenced by the fact that the milk sugar, which is a normal, natural constituent of the milk serum, had been reduced to about one-half the quantity present in the unwashed butter. The same changes had also taken place as to the content of mineral matter or

ash and [casine], or nitrogenous matter. There is probably a 15-per cent replacement of wash water, or rather, to express it differently, a 15 per cent replacement of the original water of the cream by the added wash water.

By the Court:

Q. You say you took the cream, took the butter before
162 it was washed? A. Yes sir.

Q. And extracted water from it?

A. Yes sir. The constituents that were not—take a sample, heat the water, the curd and mineral matter settles to the bottom, and the fat raises on top, and you draw off the water.

Q. You extract the water before the butter is washed?

A. Yes sir.

Q. You found, if you washed that same butter, it would absorb water? A. No, I don't think that is——

Q. That is what I wanted to find out.

Mr. Peterson: It is conceded here that washing butter is proper, and involved no violation of law.

The Court: I want to understand what he found out.

The Witness: We found that to be the fact, that the water present in finished butter was not the water originally in the cream, but was a mixture of the water constituent of the cream and the added washwater.

By the Court:

Q. The way you found out was by taking the water out of the butter before it was washed?

A. Yes, and taking the water after it was washed, comparing the two waters, the water from the washed butter and the water from the unwashed, found that the original water had been replaced in part by the washed water. To reduce it to simple terms, it is this: that the water content of finished washed butter is not the water originally present in the cream, but is composed in part of the water originally present in the cream and the outside water added during the washing process.

Q. Did you find there was any more water in the butter after it was washed than there was in the butter before it was washed?

A. No sir. Our experiments showed about the same con-

tent before and after washing, but the character of the water was changed.

163 By Mr. Peterson:

Q. Water is water?

A. Water is water, but the non-fat constituents of butter are water plus certain constituents soluble in water, which are inherent in milk, mineral matters, milk, sugar,—soluble—[casine]——

Q. The conclusion which you give is that the water content before and after washing is relatively the same?

A. Yes sir.—Well,—no, that is one of the conclusions, but the other conclusion was that—the finished product was——

—Q. The finished product was not your original water from the cream? In other words you didn't proceed by elimination to reduce your water in cream from 80 per cent to 16 per cent, and still have the same water when you end up with finished butter, you had not only eliminated a large part of the moisture in cream, but you had also added thereto a certain amount of extraneous water, which came from the wash water, and not the cream.

Mr. Jaques: That is, the butter fat absorbs——

—The Witness: You have eliminated and added.

Mr. Peterson: No one claims that is any violation of law.

By Mr. Jaques:

Q. This test of yours indicates that in the course of washing the butter fat did absorb, or take into itself, outside water?

A. Absolutely. That is the only conclusion you could reach from the facts.

Q. Can that be put in, or caused to be absorbed, by these churns that they use?

Mr. Peterson: Objected to as immaterial, and not within the issues in the case, it being conceded that the washing of the granular butter is a necessary process, and in doing that in the ordinary and usual way we are not using
164 the process or the material the effect of which is to cause the absorption of water.

The Court: He may state, if he knows, of any practical way in ordinary butter-making where that wouldn't occur.

The Witness: It will occur in all butter that is washed. It would not occur necessarily in unwashed butter.

The Court: It could not occur in unwashed butter?

The Witness: It could not. But the other thing is a chemical fact,—it does.

The Court: You don't know of any method of washing it, and not having that occur?

The Witness: No sir, I don't.

Mr. Jaques: Would you say, then, that counsel has been, all through this case, been talking about the butter process has been one of eliminating, instead of incorporating it,—your test does show that it absorbs, the butter-fat does, and that there is water incorporated in the butter-fat by churning?

Mr. Peterson: Objected to, no proper foundation laid for the question, calls for an opinion, and is not material to any issues in the case, it being conceded that washing the butter in the ordinary way is a lawful process and is not unlawful incorporation of water, in abnormal quantity.

The Court: I think he has practically stated what your question asked, in his explanation.

Mr. Jaques: If that is the idea of the Court, I don't care to have it answered.

(By Mr. Jaques):

Q. What in your opinion, Mr. Doran, is the—from these experiments that you have been conducting and tests,
165 is the average content of creamery butter, churned under normal conditions?

Mr. Peterson: Objected to as immaterial, the competency of the witness not being shown, and no proper foundation being laid for the question, and the average water content being immaterial to any of the issues in the case, not a proper element under the Act of May 9, 1902.

The Court: Confine that to any particular time, any particular place, any particular kind of butter he may answer.

(By Mr. Jaques):

Q. Creamery butter. It is creamery butter. We will add, made August and September, 1918.

The Court: If he knows what the average water content

of butter manufactured in the United States in August and September, 1918, was, creamery butter, he may state.

The Witness: I don't know.

By Mr. Jaques:
Q. Could you give us the names of any other authorities on this moisture content,—water content of butter?

Mr. Peterson: Objected to as immaterial.

—Q. or control of moisture content?

The Court: He may answer.

The Witness: Webster, former chief of the Dairy Division, published a bulletin on Butter-Making, on the Farm; I can't recall the date, but he discusses the control of the moisture content.

Mr. Peterson: Confine your answer to the names of the authorities, that is the inquiry.

The Witness: Lee, Barnhard and Hapburn, of the University of Illinois, published a very extensive bulletin on
166 Factors Affecting the Moisture Content of Butter; Frank R. Chute of the Inland Revenue Department of Canada, has published a bulletin on Factors Affecting the Moisture Content—Control of Moisture Content of Butter. Dr. Wiley, in his Foods and Their Adulteration, has discussed the question of the moisture content of Butter, what its limits should be.

Q. Can you tell us what Dr. Wiley concluded with reference to that?

Mr. Peterson: Objected to as not proper cross-examination, no proper foundation laid for the question, not material to any of the issues of the case.

The Court: Sustained.

(By Mr. Jaques):
Q. Any others, authorities on that question of water control?
A. Farrington and Wohl (?), Richmond,—I forget the exact title of the book, but it is published by Professor Meyer, of the University of Wisconsin, on Butter-Making; goes very fully into the matter of the control of moisture——

—Mr. Peterson: He just asked you for the names of the authorities.

The Witness: I can't recall the name of the publication, it is on Butter-Making. I don't recall any others right at this minute. There are a great many miscellaneous bulletins published by various agricultural experiment stations. I won't attempt to name them.

By Mr. Jaques:

Q. I wanted to ask you, Doctor Doran, about the Irish test of water in butter. I understood you to say that in making that test the butter is heated twice, in order to make sure of the elimination of all moisture. Is that right?

A. Yes, that is right—only method we used.

Q. I suppose that is modified by the Department in their method—the basis of the Department's test is the
167 Irish test and additions?

A. I wouldn't say it is the basis, because it antedated the Irish test—The theory of it all is very simple; it is evaporation of the moisture under controlled conditions, and getting the loss of weight, and calculating that as moisture.—The so-called Irish test is merely a patented scheme, where, instead of using drams or grains or metric weights, he has used the arbitrary weights. I don't know where they are—that is, where the patent comes in, but the theory is the same; you weigh out ten grams of butter, or approximately so, and heat it in a cup over a hot plate, an alcohol flame, or any source of heat, until the water is evaporated off into the air, and cool it, weigh it again, there has been a certain loss in weight, due to the moisture loss, and that is calculated as moisture. In the chemical method you do the same thing, with this difference, that you [weight] the sample much more accurately, weigh it to the fourth decimal place in dram weights; you heat the sample at exactly the temperature of boiling water, so you get no over-heating,—you do not get any under-heating, until you are assured all the water is driven off, and then you weigh it, and make a second heating and a second weighing, to be assured the clouds are all driven off. The difference is merely one of experiment; the theory is the same.

Q. Does the Irish test have the second heat?

A. As a rule they do not; they heat it until they think by the looks of it the water is all driven off.

Q. I believe the young lady testified she only heated it once? A. That is what I understood.

Cross Examination of James M. Doran.

By Mr. Peterson:

Q. Mr. Doran, first calling your attention to several questions about the so-called moisture test. You said on
168 your direct examination, as I understand it, both in the case of the Irish test, which is the practical test in creameries, and in the case of the chemical test it is a question of washing before and after? A. Yes sir.

Q. In a general way. And the Irish test, so-called, patented Irish test, is the one that is commonly in use in creameries? A. Yes sir.

Q. And the chemical test, the scientific chemical evaporation laboratory test which you made, and which you have referred to, is not commonly in use in cooperative creameries generally?

A. No, except as a control, or comparison, test, check test, occasionally.

Q. But in the manufacture of butter the chemical test that you made is not the one that is in vogue?

A. It is not commonly used——

Q. A particular creamery from time to time, to check on its Irish tests, might or might not, make a chemical—may make the chemical laboratory test that you have described?

A. Yes, that is a fact.

Q. That is the way you mean to put it? A. Yes sir.

Q. And you are not a butter-maker? A. No sir.

Q. Never worked around a creamery? A. No, sir.

Q. And—— —A. I have been around a creamery.

Q. You know it would not be practical to make a chemical test, in the case of every churning of butter?

A. Be impractical.

Q. Have to be--have to have several times as many churns, and hold up your work.—It would be impractical?

A. Be impractical, except in a large creamery, where they can afford it.

Q. Even in a large creamery, it would not be practical every day to test it from time to time?

A. In a large creamery, I think it would.

Q. What do you mean by a large creamery?

A. Well, it takes a couple of hours to make that test, two hours and a half.

169 Q. And with a first moisture content of 16.4, you would have to wait two hours and over for—a couple of hours, to find that out?

A. This first and second moisture test——

—Q. Just answer my questions.

A. That is true. But that was not my information.

Q. You would have to wait that long to find out the result of the test? A. If you didn't, [yet].

Q. Would have to hold up your churning that long?

A. If you didn't.

Q. That is one reason why it would be impractical?

A. Yes sir.

Q. That is what you meant? A. Yes sir.

Q. And, I suppose, in order to determine the final constant, if you waited one hour for the first one, you would have to wait the same length of time for the second one?

A That is right.

Q. I think you stated it well when you said that the chemical test was a greater instrument than the Irish test?

A. More accurate test.

Q. In other words, might there be variations between the Irish test, as it is carried on in creameries, and the chemical test, that is carried on in the laboratory? A. Yes sir.

Q. Now, in your chemical test, that is a drying process, sometimes called drying test? A. Yes sir.

Q. Repeat—You repeat your weighing there, in order to—— A. see that it is constant.

Q. And by that you mean it would weigh the same?

A. Yes sir.

Q. And that covers the drying process of a couple of hours? A. Two hours and a half.

Q. Now, in your examination, in your testimony bearing upon your moisture content test, while the butter is in the granulated form, and after the washing, you said something along scientific lines, about water content, and the

170 substitution of water, some of the water of the wash

replacing some of the water which was naturally constituent in the granular butter? A. Yes sir.

Q. Now, butter fat is composed of various oils, isn't it?
A. Butter fat is a mixture of fats.

Q. Mixture of different fats, or a mixture of different oils?
A. They are in an oily condition.

Q. Be different scientific names? A. Yes sir.

Q. And different consistency?
A. Different consistency, yes.

Q. In other words, you might have, as in the case of petroleum oils, might have oils of various consistencies, might you not? A. Yes sir.

Q. And would it be also proper to say that having oils of various consistency, you would have oils of varying volatility? A. Yes, that would usually follow.

Q. What I am getting at is that—there appears to be here—taking the average of these tests, which you said was 16.76? A. That was my recollection.

Q. Appears to be a difference of something more than a point .76—or .76 of a degree in the moisture content, based upon the chemical evaporation test which you made, and the tests which were made at the creamery under the Irish test, appears to be a variance there?
A. Yes, that is what the figures show.

Q. Now, this is what I would like to know: this process—this chemical process is much longer-continued than the making of the Irish test, as is practically done in the creamery? A. That is right.

Q. Mr. Doran, might this continued process of distillation—you can call it a process of distillation?
A. Yes, it is distillation.

Q. That is what you call it in the case of the manufacture of whiskey and the manufacture of gasoline?
A. For instance, distillation without condensation.

171 Q. Might you not have in this process of distillation, or this process of evaporation, a passing-off not only of moisture, but some volatile oil, or some portion of the volatile oil in the original butter-fat?

A. That is not possible with the chemical test, as we [perfomr] it, for the reason that the temperature at which the sample is kept is the temperature of boiling water. Now the constituents of butter-fat, various fatty oils, are not all at that temperature; they boil at very much greater temperature.

Q. Are you sure about that? Might there not be some volatile oil in the butter fat that after the drying process of a couple of hours, at the temperature of the boiling of water, might there not be some volatile oil or vapor there in the constituent butter fat that might pass off?

A. There is a very slight breaking-down of what is called the volatile acid fats, and an odor of [utric] acid could probably be detected, but that loss, so far as I know, and we have made a great many tests, is indeterminable, that is, the quantity is not such it is a determinable quantity; and there is this further fact that would offset any possible loss in that direction, that when you heat butter-fat for an extended period of time, say upwards of two hours, you will get an actual increase after the moisture has been driven off—it will commence to weigh a little more right along. That is due to the taking-up of oxygen from the air, forming an oxygen compound with the fat. So the chemical evaporation test, if anything, would show a little bit less moisture than was actually present, particularly if you heated it much beyond the two-and-a-half-hour period. Occasionally you find that at the second heating it is not a constant weight; then you will—that is, it has decreased since the first heating;—you will heat it again for another half-hour, and weigh it the third time. You will find frequently that
172 there has been a gain in weight rather than a further loss. That is due to oxydization. Now in making a test like the Irish test——

—[Q.] "A gain in weight"; you mean by "gain in weight", of the original of the mass, after the draining?

A. Yes; don't dry any further, commence to gain, instead of losing, that gain being due to oxygen [comgining] with the fat. But it is very slight; all of those are down within two and three hundredths of one per cent, at the extreme. The Irish test, you don't know in the first instance the exact temperature at which you are heating the sample. It may be less than the boiling point of water, in which case you would drain it all off. It may be greater than the boiling point of water. You may burn it. That is frequently the case, and in that case you would break up these fats, and

possibly volatilize some of them, and get seemingly what is a greater percent of water than was actually the case; but I believe that more frequently they failed to boil all the water off.

Q. One is a scientific method and the other is a practical method? A. Yes sir.

Q. And you may have a variance between your moisture test, as customarily and ordinarily made,—in the manufacture of creamery butter you may have a variance between that Irish test and the scientific test? A. Yes, that is right.

Q. And you may have a variance as much as half a degree? A. Frequently varies half a per cent.

Q. In other words, a variance of .50, or ½ per cent, and the moisture test would not be inconsistent in an Irish test than in a scientific, laboratory test? A. No.

Q. It would not be inconsistent?

A. It would not be inconsistent; but the rule is it will vary both ways, [sometime] over and sometimes under. It is rather unusual to have the consistency vary on one
173 side; the nature of the test, its inaccuracy, would indicate a variance first up and first down.

Q. It may vary half a per cent. The personal equation enters into the person operating it?

A. Very naturally a person has to be reasonably skilled to do the Irish test.

Q. I mean, besides the variation of one-half a per cent, by reason of the machinery and the modus operandi, have you not, in addition to the personal equation, that is, the person operating it, the operator? A. Exactly.

Q. So, somebody else making these same tests that you made, Mr. Doran, made by the chemical method, by reason of the variance, might arrive at a different finding, as to moisture content?

A. Yes sir, within very much narrower limits than the Irish test; I would say 1 or 2 tenths of 1 per cent.

Q. So, putting it in accordance with your best judgment, you may have a variance of ½ a per cent between the Irish test and the chemical test, and as between the two chemists, equally skilled, and equally careful, and the tests being made at the same time, may have a variance of 2/10ths of a per cent? A. Yes sir.

Q. Or 2/5ths of what the variance might be, in the other case?

A. Yes. I think that is the outside limit—to the chemical tests.

Q. 2/10ths, and the other 5/10ths, or .50? A. Yes sir.

Q. You don't say positively and absolutely that the chemical test might not result in driving off something volatile, and therefore give you a difference in addition to the difference of the moisture content in the original mass, when first weighed and subsequently weighed?

A. I would say it is as near as can be determined by numberless investigations,—check analyses, and every means we have of determining the scientific fact. It is never absolutely accurate. Nothing is absolutely exact.

Q. Have you made investigations of—an analysis,
174 quantative and [qualitive,] chemical analyses, quantative and [qualitive,] of the various butter of the various butter fats or oils in butter fat?

A. No, not complete,—quantative and [qualitive] analyses of all the constituents of butter fat; I have made partial analyses.

Q. Quantative chemical analyses of the fats in butter fats?

A. In determining the volatile butter fat, there is a very common determination in chemical laboratories.

Q. You are getting past me now a little bit. You have only made a partial investigation and partial finding as to the chemical quantative analyses of the fats and oils in butter fat? A. Talking about my personal work?

Q. Yes sir. A. That is right.

Q. Quantative has reference to the various [percentagees,] or quantities, of the different kinds of fats in the total mass of butter fat? A. Right.

Q. And [qualative] has reference to the qualities of those various constituent fats or oils in butter fat?

A. No, would have reference to the kinds of fats without reference to the quantity in which they may be present.

Q. [Qualative] analysis has to do with the kinds?

A. [Qualative] analysis has to do with the kinds; quantative with the amounts of those kinds.

Q. I asked you what the quantative was. You answered

properly, and I asked you what the [qualitive] is. You say it has to do with the kinds? A. That is correct.

Q. And when you are talking about the kinds of butter fats, or when you are talking about the kinds of the fats in oils that constitute butter fat, you have reference to the various qualities they may possess? A. Various properties.

Q. Including volatility? A. Yes sir.

Q. Now, have you made examinations and tests of the
175 chemical qualitative analyses of oils and fats constituting butter-fat, to determine their various qualities, including the volatility? A. I have in part.

Q. But only in part? A. Yes sir.

Q. So your information is limited to your investigations qualitatively and quantitively of the oils and fats in butter fat only as far as they have gone? A. Yes sir.

Q. Your own finding eliminated?
A. My personal finding. I don't say my information.

Q. Your own personal information is limited to your own personal finding? A. Naturally.

Q. To be fair with you, have you information [qualitively] of the fats in oils that constitute butter fat, from your study and from your reading?
A. Oh, yes. That subject has been gone into very thoroughly by chemists, both in this country and Europe. A great deal of published literature on it, volumes.

Q. Well now, do you mean to give your opinion from the information you have and from the study you have made, that there is nothing volatile except H2 O,—except water,—that there is nothing volatile except water, in the operation of finding the chemical moisture content, according to your process?
A. I don't believe I made that statement, Mr. Peterson. I said there is nothing determinable other than water, that is volatile to the best of my knowledge,—nothing determinable, quantatively determinable. I said you will get an odor of [uteric] acid on the heating of butter, and to the best of my knowledge the loss for that reason is practically nil,—a little odor of [uteric] acid goes a good way.

Q. I am not talking——
—A. I am talking about quantity. I am trying to make it as simple as I can.

Q. But do you say that there is nothing volatile other than water which passes off in the chemical evaporation test which you made of these samples of butter?

A. For all practical purposes, yes.

176 Q. But, scientifically, that might yield to the fact?

A. Just what I have explained, some other very small quantity of odorous matters goes up, which is indeterminable, negligible, yet detectible to the nose.

Q. And might exist in some small per centage?

A. Very small percentage, yes sir.

Q. Now of course, your practical analyses as to water content only have reference to the particular analyses that you yourself have made covering the butter, that in some way has been handed to you for chemical analyses? A. Yes sir.

Q. You don't know how that butter is made? A. No.

Q. Or anything about it, other than what your findings were as to the moisture content, after the chemical analysis which you made?

A. That is all. Butter comes to us labeled; as to the accuracy of it, the labels, I know nothing, or how it was made.

Q. In other words, you are a chemist, and your function was to find out what the chemical content was? A. Exactly.

Redirect Examination of James M. Doran,

By Mr. Jaques:

Q. Now I have here a certified copy of the Rules and Regulations of the Internal Revenue Department, which I would like to have marked Exhibit 4 (which is so done).

Mr. Jaques: Offer Exhibit 4 in evidence, but particularly for the purpose of getting into the evidence the regulation which is involved in this suit, which is contained at the top of page 87 of Exhibit 4, and that regulation reads as follows:

"Definition of adulterated butter as contained in the act of May 9, 1902, embraces butter in the manufacture of
177 which any process or material is used whereby the product is made to 'contain abnormal quantities of water, milk or cream' ", but the normal content of moisture permissible is not fixed by the act. This being the case, it becomes necessary to adopt a standard for moisture in butter which shall in effect represent the normal quantity. It is

therefore held that butter having 16 per cent or more of moisture contains an abnormal quantity, and is classed as adulterated butter.

Mr. Peterson: It is admitted that such a rule was promulgated by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, but the rule is objected to for the reason that it is immaterial, and was held void in U. S. v. 11,150 lbs. of Butter, 195 Fed., Circuit Court of Appeals, Eighth Circuit, which decision is the law of this case.

Mr. Jaques: And it is admitted that that was adopted and went into effect on July 1, 1902, at the same time that the law went into effect.

Mr. Peterson: Colorably, but not in fact.

Mr. Jaques: I mean it was adopted, supposedly, in effect, at the time the law went into effect.

The Court: It may be received.

Mr. Peterson: You having read that into the record the book stays out?

The Court: I suppose inasmuch as this particular part of the Exhibit went into the record, the rest of the book is not of any materiality in this case?

Mr. Jaques: No.

Mr. Peterson: Our admission is such a ruling was promulgated, but the introduction of the reading is objected to because it was held void.

178 Exception to the reading of the excerpt from the exhibit into the record.

By Mr. Jaques:

Q. Are you familiar with the procedure carried out in the making of this regulation by the Department, or investigation as carried on for that purpose?

Mr. Peterson: That is objected to as immaterial, in view of the holding of the court of this circuit, and which becomes the law of this case.

The Court: What is the purpose?

Mr. Jaques: I wanted to make the record. The question of a regulation or rule adopted of course depends upon its

reasonableness and the care and accuracy of the investigation leading up to the adoption of the regulation, in case—perhaps not in this court, in the Circuit Court of Appeals, in case this case should be taken up to the Supreme Court of the United States the court would have before it the circumstances and conditions, and so forth, under which the regulation was adopted, bearing in mind its reasonableness and propriety. That was the idea I had in offering this.

Mr. Peterson: Objected to on the ground the question involved is one of power, and the only power to promulgate the rule in question being legislative, and in the Congress, as held by the case in 195 Federal.

Mr. Jaques: That wouldn't be necessarily true as to this court.

Mr. Peterson: Yes, it would. It is true as far as the law of this case is concerned, as I understand it. You can make your offer for your record.

Mr. Jaques: I wanted to get the facts into the record.
179 The Court: I will pass on that in the morning.

At this point in the trial of the case an adjournment to ten o'clock a. m., June 22, 1921, was taken.

Proceedings of June 22nd, 1921. Morning Session.

Mr. Jaques: The last question I asked, the question was submitted, and that was objected to. I have thought that over, and I have doubts about its materiality.

The Court: It was allowed to be introduced subject to that.

Mr. Jaques: Withdraw the last question.

James M. Doran called for further Cross Examination.

By Mr. Peterson:

Q. Doctor, the sample that you take in determining moisture test destroys itself in the making, doesn't it?

A. Yes sir.

Q. It was not reincorporated again in the butter? A. No.

Q. And this is true, isn't it, Doctor, that the moisture finding is the amount of moisture in the particular sample that is taken? A. Yes.

Q. And your sample in each of these 171 cases was not the identical sample that was tested for moisture in the creamery by Mrs. Scheipl, the employe who made the moisture test there? A. No.

Q. So the situation is this; your test shows the moisture content in your sample? A. Yes sir.

Q. And her test shows the moisture content in her sample? A. Yes sir.

180 Q. And of course it is possible that the moisture content might be different in different samples from the same churning?

A. Not very much. There will be slight variation.

Q. Can it be accounted for, other things being equal, and other things being accurate, by the fact that samples are in [specie] different?

A. Yes, that accounts for variation on one side of the line.

(Witness excused).

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OLE A STORVICK, being first duly sworn to tell the truth, the whole truth, and nothing but the truth, testified as follows, on behalf of the defendant.

Examination in Chief.

By Mr. Jaques:

Q. Where do you live, Mr. Storvick?

A. Albert Lea, this state.

Q. How long have you lived there?

A. I have lived in the county since 1896, with the exception of four years; I lived two years at Crookston, and two years and a half at St. Paul.

Q. Have you been educated in the manner of buttermaking? A. I have.

Q. Where?

A. I served as apprentice in a creamery, and I attended the University of Minnesota dairy school.

Q. What creamery did you serve the apprenticeship in?

A. Albert Lea,—Twin Lakes.

Q. How long an apprenticeship? A. About two years.

Q. And when was it about?
A. 1896 and '7, I worked as an apprentice.

Q. When did you go to the University?
A. In the winter of 1897 and '98.

181 Q. And were there how long?
A. During the winter course in Creamery Butter-Making.

Q. That is in the dairy school at the University?
A. Yes sir.

Q. What have you been doing since?
A. I was employed by the Creamery at Emmons, Minnesota, for twelve years.

Q. What was that, a co-operative creamery? A. Yes.

Q. In what capacity?
A. I was butter-maker in charge the last ten years I was there.

Q. And then what did you do next?
A. I was appointed Creamery Inspector for the Minnesota Dairy Commission.

Q. How long were you creamery inspector before that, Minnesota Dairy and Food Commission?
A. A little over two years, and then I was secretary of the Commission about two years and a half.

Q. What were your duties as secretary?
A. I had the supervision over the creamery inspectors in part, and I had the creamery statistics to compile, and conducted the six-months educational contests in butter contests for the Dairy and Food Department.

Q. That was while you were secretary. Before you were secretary, you were inspector of creameries? A. Yes sir.

Q. In the state? A. Yes sir.

Q. Now, after you were with the Minnesota State Dairy and Food Commission, what did you next do in connection with the butter business?
A. I was appointed as Dairy and Food specialist for the Dairy Division of the United States Department of Agriculture.

Q. How long were you in that?
A. About eight years,—with the Federal Dairy Division.

Q. What were your duties as Federal Dairy and Food specialist?
A. Creamery extension work, demonstrating to creamery men how to secure the best results from creamery operation.

Q. And all the time you were with the government that eight years—you were engaged in that?
182 A. Those were my principal duties, such as butter-judging at state fairs and educational contests. But that was my principal.

Q. Would that take you all through the country?
A. Yes. Being located in Minnesota, my principal work was in the mid-west, altho I covered the territory from Montana as far east as New Hampshire.

Q. But the principal part of your work was in the mid-western states? A. Yes sir, in the creamery section.

Q. Illinois, Iowa, Minnesota, Dakotas?
A. Dakotas, Nebraska, Minnesota, Wisconsin.

Q. After you left that employment what did you do after?
A. I resigned from the Federal Dairy Division last June, a year ago, and have since been employed by a New York butter-maker, representing them in the west, buying butter and working with the creameries and to maintain a standard quality of butter.

Q. For the New York firm? A. Yes sir.

Q. Now, have you kept up with the literature of—relating specially to this matter of the water content of butter?
A. Yes, I have followed as closely as possible all standard bulletins and literature that have come out.

Q. Did that include this country and foreign countries?
A. I have read the principal literature of this country and some of the foreign countries.

Q. What foreign countries?
A. Principally that of Scandinavian countries. I read those languages, and of course I am able to get information from those better than I would from those that have been translated into the English language.

Q. That would cover Denmark, Norway and Sweden?
A. Yes sir.

Q. Now, at the dairy school of Minnesota, did they have —teach there in regard to water contents of butter?

A. At the time I took my creamery course there was no definite knowledge as to the water content given to the students. The only thing we had to rely on at that
183 time was our overrun, or what was known as—at that time, as churn-yield.

Q. Will you explain that proposition, over-run,—what does it mean?

A. Butter-fat is bought from the farmer by the creameries. Butter-fat is a pure dry oil, as determined by the Babcock Test, and in the manufacture of butter other ingredients are incorporated, which add to the quantity of the material bought. These ingredients are water, salt, [casine], and small amounts of mineral substances, and at that time the teaching of the Minnesota University was that if we increased the fat, that is, if we made an increase or yield of 16 per cent we were doing good work.

Q. Over——

—A. Over the dry oil purchased from the farmers.

Q. Butter fat.

A. That would mean that the water content would run between ten and 11 per cent.

Q. The balance of the 16 per cent what would that be?

A. It would not be 16 per cent. The base changes. We would go on 100 as a whole, this butter being 100 as a whole, and 16 per cent would mean that we had 84 per cent butter-fat in our butter. There is slight mechanical losses, however, that had to be accounted for.

Q. You said over-run of 16 per cent?

A. Yes, "over-run" is a term that the creamery men use for this difference between the weight of the dry oil purchased and the butter that is sold, the pounds of butter that are sold.

Mr. Peterson: Don't confuse it with 16 per cent of moisture.

By Mr. Jaques:
Q. What is the composition of the over-run?

Mr. Peterson: Butter.

The Witness: 16 per cent, the moisture would be between 10 and 11 per cent, and the salt probably—between 2½ and 3, and the [casine]—and the [casine] content would be somewheres about 1 per cent, which would make up the 16.

184 By Mr. Jaques:
Q. What year was that?
A. This was in 1897 and 1898.

Q. Now are there any records made showing how the over-run has been since that year?
A. Yes sir. All the literature that I have seen since tends to show that there has been a constant increase, especially since 1890—1891—there has been a steady increase in this over-run.

Q. What does that mean? How do you figure that out as to what that means, as to water?
A. The first that I recollect of any discussion of this difference in over-run was that water could be incorporated into butter, and being interested in that I naturally sought to discover if possible a way of determining. The only methed that I could devise in my creamery work was——

—Mr. Peterson: If the Court please, I think the Plaintiff should make a record on this, and for the purposes of the record, the plaintiff objects to the introduction of this testimony for the reason that it is not within any of the issues in the case, and is not material to the question at issue, which is whether or not the butter in question contained, first, an abnormal amount of moisture; second, that in its manufacture a process or materials were used with intent or effect to cause the absorption of abnormal quantities of water.

The Court: He may answer.

Mr. Peterson: Exception.

The Witness:
A. The first method of determining the water, I took 100 CC cylinder, which is a straight tube graduated to

100 degrees, or 100 centimeters; and I would fill that with a hundred CC mark with butter and set it on top of the boiler, where it was very warm, corked it, and the water and curd would settle to the bottom, and I could read in the settling—water made heavier, would settle
185 out. That was the first means I knew of for determining moisture in butter, it was crude, and probably quite inaccurate.

—Q. Just while we are on that phase of it, you are familiar with what is called the Irish test? A. Yes sir.

Q. And you have heard the testimony in the case about the Irish test in butter? A. I have.

Q. You heard the young lady's testimony about how she operated that test? A. Yes.

Q. Can you explain to us whether there was any defect in that operation, as she related it here?

A. From the testimony, she was not using the Irish test. She was using a modification of it. The Irish Test was a patented device, in which the inventor sought to patent a means of determining moisture in butter by evaporation, which was first designed, so far as I knew, by Drewbridge and Irish, and later by Patrick, of the Bureau of Chemistry, but not in general use, Mr. Irish being unable to secure a patent on the test itself; so he finally designed what is—weights not based on the metric weights, but dissimilar weights, that would read percentages, and he [secure] a patent on that. So far as I know, the Irish test has not been used by creamery men the last ten years. It is evaporation test designed by Drewbridge and Patrick, in which they employed ten grams as a sample. At first we used centigrams and decigrams, to indicate the loss in weight, which would direct in percentage, or figuring percentage without any mental calculation. Later on scales have been designed, with graduations on the scale beam which indicate the per centage without any loss weight; so that we are now using a ten-gram weight of butter with these scales, that have graduated means.

Q. Now you say the first test that you used was this tube you speak of?

A. Yes. The next test that I had knowledge of was
186 the Gray Moisture Test, in which the water was evaporated from the sample of butter and condensed

in a graduated tube, which would show the percent of water. It was covered in a graduated tube that would indicate the per cent of moisture, and as long as I remember—in 1907, I believe in 1907, that this Irish test was patented, these patented weights came out. I may say, though, Mr. Irish sold an army prescription scale and that these weights and aluminum cup and pair of [pinchers;] that was his outfit.

Q. Now, Mr. Storvick, you have heard what the different bulletins that have been referred to in the testimony here state. Can you tell us whether there is any other record book kept, or any record book kept, that would show through years whether there is any increase in the overrun of butter?

A. Yes. The creamery statistics of the State of Minnesota indicate that.

Q. Kept by the State of Minnesota. The statistics of the dairy and food? A. Yes sir.

Q. Do you know what those statistics show, as to that?
A. Yes, I do. I have the figures here. The first complete statistics of the Dairy and Food Commission that were compiled and are preserved, were 1910.

Q. Commencing with 1910? A. Yes.

Mr. Peterson: Do you want to read from that?

The Witness: Yes sir.

Mr. Peterson: The reading of the statistics is objected to on the ground no proper foundation therefor has been laid, and the statistics are not material to any of the issues in this case.

By Mr. Jaques:
Q. That is a bulletin published by the State of Minnesota?
A. Yes sir.

Q. Dairy and Food Commission?
A. Compiled from the annual reports of all creameries of the state.

187 Q. And has been circulated all over the country?
A. Yes sir.

Q. And is it an authority? A. Yes sir.

Q. That you rely on? A. It is.

Q. Can you say from your experience that those figures are accurate?

A. They are substantially accurate. I have not compiled the statistics myself; they were compiled under my supervision while I was Secretary of the Dairy and Food Commission.

Q. While you were secretary there?

A. Yes sir, 1911, '12 and '13.

Mr. Jaques: I think I ought to be permitted to show what the statistics and record show of this overhead run.

The Court: Do you offer the statistics themselves?

Mr. Jaques: Either the statistics themselves, or permit him to refer to them. And I will offer the Bulletin, State Dairy and Food Commission, for the purpose of showing the percentage of over-run.

The Witness: There are many other figures, but one column shows the over-run for every year beginning with 1910.

By Mr. Jaques:

Q. This begins at what page? A. 22.

Q. And 23?

A. Yes. And continues right on, down to page 39.

Paper referred to by counsel marked Exhibit 5 offered in evidence.

Mr. Peterson: There is no objection as to the question of the identification, or whether this is a publication of the State Dairy and Food Commission of Minnesota; but the offer is objected to on the ground that no proper foundation has been shown as to the original accuracy of these statistics, and these statistics in question are not material to any of the issues in this case.

188 The Court: I think it may be received.

Mr. Peterson: Exception.

By Mr. Jaques:

Q. Now, calling your attention to Exhibit 5, and asking you to refer to the column that shows the over-run, can you give us how that over-run is?

A. The average over-run from 762 creameries in Minnesota, for 1910, was 19.9; for 1911, 814 creameries, the over-run was 20.21; average over-run in 1912, for 864 creameries

was 20.78; the average over-run for 852 creameries in 1913 was 21.12; the average over-run, 1914, 850 creameries, 21.53; the average over-run in 1915 for 855 creameries was 22.19; the average over-run, 1916,—I will have to—it doesn't show —they had the creameries in three classes. I will have to make an addition. (After calculation): 748 creameries in 1916, 22.15; average over-run in 1917 for 841 creameries, 22.50; average over-run in 1918, for 823 creameries, 23.31.—I have not the latest publication, which shows the subsequent —I am unable to show it.

By Mr. Peterson:

Q. You have no statistics on 1919 and 1920?

A. Not in this because it is not the latest.

Q. I call your attention to creamery list for 1920, creamery statistics for 1910 to 1919—that would be a year later?

A. Yes sir. This was issued in 1919.

By Mr. Jaques:

Q. This book here, 1920, would show the 1919, would it not? A. I suppose so, yes. Should I read these figures?

Q. This the same form of publication as the other, and is the records of the State of Minnesota Dairy & Food Commission, statistics as to butter over-run, dated 1920.

Mr. Jaques: I offer it in evidence.

The Court: Why don't you substitute that in place of the other? No need of having both in the record.

189 Mr. Jaques: I will substitute this book for Exhibit 5.

By Mr. Peterson:

Q. Otherwise the figures would be the same?

A. Yes, they are prepared——

Q. This compilation includes what is in the other one, and the year 1919?

A. Yes sir, an additional figure. It is the same type. They are preserved from year to year by the state printer.

By Mr. Jaques:

The Witness: The average over-run, 1919, 811 creameries, 23.29.

Q. Now, what does that over-run there indicate as to water content?

A. Well, there is only two ingredients that can possibly be increased in making butter, and that would be water, or [casine]. The salt would not be well increased, because that is dependent on the trade. So that it would indicate that moisture has been—water content has increased since the over-run has been increased there, 3½ per cent.

Q. Now, taking that over-run of 1918, that was 23 and what? A. 23.31.

Q. I believe you told us once—what does this over-run consist of?

A. An over-run of 23.31 would indicate that the water content would be very close to 16, because there are—if we made butter with 80 per cent butter fat, we would have 25 per cent over-run; but there are certain mechanical losses, such as a fat lost in the butter milk, and other unavoidable losses, such as rinsing of vats, churns, and other utensils; so that there is really a loss of about—from 2 to 2½ lbs. in every 100 lbs. purchased, that is not recovered in the process of butter-making, or recovered in the butter itself.

The Court: Can you translate those figures of over-runs into per centages of water?

The Witness: Well, it would be very difficult to do, be-
190 cause I don't know just what the churn loss is. If we use 80 lbs. of—if we buy 80 lbs. of—say, buy 100 lbs. of butter fat, we find that there is some of this butter fat lost in passing through the plant in the rinsing of vats and utensils and churns and an unavoidable loss in the butter milk, which, as I said, amounts to about 2 per cent of the total fat purchased, which if taken away from the 25 per cent, would be about 23 per cent over-run, that we could expect if we had 80 per cent butter fat.

The Court: Then you can not translate these over-runs into percentage of water, without knowing the amount of butter fat?

The Witness: No.

The Court: That was left in the butter?

The Witness: No—without having the analysis; but it is evident that the water content has been increased to show this increase in over-run, because there is no other ingredient that can take the place of it.

The Court: The lessening of loss in butter fat.

The Witness: With our most modern appliances, we are unable to hold that loss down below 2 per cent.

The Court: Have you any figures to show that?

The Witness: Yes, we can easily show that by a number of publications. We have bulletins on that, and I would be glad to—I have not any with me here, but I will be able to get one.

Mr. Jaques: Here in St. Paul? A. Yes sir.

By Mr. Jaques:

Q. What you call the over-run is what your butter comes out weighing more than the butter fat that you bought?

A. Yes sir.

Q. So out of 80 lbs. of butter-fat, you would get over 100 lbs. of butter?

A. No, you would make approximately 98 lbs. of butter on this basis.

191 Q. Now, under normal conditions in the manufacturing of butter, can you say from your experience and knowledge acquired in connection with the manufacturing of butter, whether or not the moisture content is subject to control by the butter-maker?

A. Yes, within reasonable limits.

Q. How near?

A. Well, it is being controlled within, I should say, 5/10th of 1 per cent.

Q. What, if any, experience have you had in controlling the butter content of butter?

A. Well, I have had experience, while butter-maker, and in the various capacities that I have worked, since 18—I have had—in recent years the supervision of some over 7 million pounds of butter, where the moisture content was limited to—from 13½ to 14 per cent.

Q. Did you hear the testimony of this witness from Plato Creamery? A. I did.

Q. Do you know how much of that—how much butter was made by that creamery for the year 1918, I think it was?

A. No, I do not recollect the exact figure. I have the figures at home. I have the report of every churning at home, but I have not them here.

Q. What was the percentage required there?

Mr. Peterson: It is admitted that the specifications of the Navy Butter are peculiar and certain, and that only butter is bought for the Navy which complies with the specifications, and these specifications may be, as was testified, 14½ per cent of moisture, or some other per cent.

The Witness: There is never any 14½ per cent of moisture.

By Mr. Jaques:

Q. What is the per cent? A. 13½.

192 Mr. Peterson: It is admitted specifications of the United States government covering Navy Butter provide for 13.5 moisture, and such butter was made and can be made and was made by the Plato Creamery Association, and in selecting that butter butter containing more than that was not properly included in the requirements.

By Mr. Jaques:

Q. I was asking him about that; that butter was made under your supervision? A. Yes sir.

Q. Can you tell us what process or method was used in making that butter, regulating the moisture content, water content?

A. It was as Mr. Radke testified yesterday. He simply reduced his churning temperature so as to make a firmer body butter that would expel the moisture in the working process.

Q. Have you made butter with this low-moisture content, this normal moisture content?

Mr. Peterson: Just a minute.

The Court: What is "normal"?

Mr. Jaques: I think between 13 and 14 is normal water content for butter.

By Mr. Jaques:

Q. Have you made this 13½ moisture content of butter?

A. I have.

Q. Yourself? A. Yes sir.

Q. How did you do it? —what is the method?

A. I would use a little lower temperature during the process of churning and working than if I was aiming for a 16 per cent or a 15½—just reduce the temperature is the only difference.

Q. Did you, while you were making that butter, did you ever lose——

—A. I never lost a single churning in demonstrating how to make that butter.

Q. Well, now, that butter, what quality of butter is it after it was made?

193 Mr. Peterson: Objected to as immaterial.

By Mr. Jaques:

Q. I will ask this question: Would that method of operation you use in making that butter in any way injure the butter or alter its quality? A. Oh, no.

Q. Would it in your opinion be better butter than 16 per cent butter?

A. Yes, it would be better, so far as the nutritive value of it and butter keeping qualities.

Q. What effect does it have using this cream and putting the cream in at a lower temperature on the churning process, as to the time of churning?

A. The temperature controls the time of churning—the firmer the butter fat globules in the cream, the longer it takes before they unite.

Q. How long does it take in actual operations?

A. We aim to churn at about 50 to 60 minutes, that has been more satisfactory, so as to secure a good, firm body, an exhaustive churning that is to recover as much of the fat as possible in the butter milk.

Q. It is in the testimony that they churned from 25 to 30 minutes in the manufacture of this butter, 17 tub yield, out of a Victor F Churn. What would you say as to the possibility of that, or as to what would bring that about, churn it in 25 or 30 minutes?

Mr. Peterson: Objected to as immaterial, no proper foundation laid for the question, and in nowise related to the issues in this case.

The Court: What do you mean by that question?

Mr. Jaques: I want to ask him what condition would make that possible,—make butter in 25 or 30 minutes.

The Court: Do you mean whether you could get butter, churning that long?

Mr. Jaques: What would make it possible to get butter by churning that long.

194 Mr. Peterson: Exception.

The Witness: It is an unusually short period of churning, and it would result in a soft bodied butter.

By Mr. Jaques:

Q. How would the—in order to bring butter in that time—how would the temperature of the cream have to be that was used?

Mr. Peterson: Objected to as immaterial, no proper foundation laid, not relevant to any of the issues in this case.

The Court: Is there any evidence here as to what the temperature of the cream was?

Mr. Jaques: I am asking the witness what effect the temperature of cream has in churning.

The Court: He has already answered that.

Mr. Jaques: I don't know as he stated that exactly. He said it would come out very soft butter. I am trying to inquire from a man, I suppose, who knows.

The Court: If we understand what the questions are, before they are answered. You are asking him [it] it were possible to produce this butter at the temperature the former witness stated. That is one question.

Mr. Jaques: To bring the butter in that time, at what temperature would the cream have to be used.

The Court: You are asking him whether it could be produced at the time already testified?

Mr. Jaques: Yes.

The Witness: The length of time of churning is—when you consider the size of churning, is a more correct index as to the temperature itself. I don't know if that is
195 clear. But the length of time of churning, the size of churning considered, isn't quite an accurate index of

the churning temperature, if we didn't know the temperature.

Mr. Peterson: Assuming the quality of the cream?

The Witness: Yes sir.

Mr. Peterson: But you don't know what the other elements were, do you?

The Witness: No.

By Mr. Jaques:

Q. What time, in your opinion as a butter-maker and an expert, would the cream have to be at in order to churn it in twenty-five or thirty minutes?

A. It would be impossible to state the exact temperature.

Q. Would it have to be high, or low?

A. The temperature is impossible for anyone to state, because it would depend upon the kind of cream, it would depend upon the kind of cream previously Pasteurized, or how long been held at this temperature. It is impossible for me to state the temperature.

Q. You said, Mr. that the butter would be soft butter? A. Yes sir.

Q. If churned in that time? A. Yes sir.

Q. How would that affect the manner of absorption of moisture by this butter fat, when it is soft or firm?

Mr. Peterson: Objected to as immaterial, no proper foundation laid for the question, not relevant to any issues in the case, being merely one of the steps in the manufacture of butter.

The Court: He may answer.

Mr. Peterson: Exception.

The Witness: A. My judgment is that the—I am considering the size of churning, and the length of time of churning, that it would result in a soft butter, soft-bodied butter.

196 Q. Would that be any different as to the absorption of water?

A. It retains the moisture more than the firmer-bodied.

The Court: The question was whether it would absorb. Your answer is that it would retain it.

The Witness: A. It is generally understood the moisture controlled is divided into two parts; one is retaining, and the other one is incorporating. The more exact way of controlling the moisture is to work it down, or to make a moisture test when the butter is partly worked. And then if it is below 16 per cent, and you have a thousand lbs. of butter in the churn, you want to bring it up to 15½, add 5 pounds of water, close your churn covers, and work this water into the butter.

The Court: That is the way of making it absorb?

The Witness: That is absorbing. And retaining is using a higher temperature, so that it doesn't let go of the water.

The Court: In other words, one is putting water into the butter, and the other is failing to take the water out of the butter?

The Witness: That is it.

Mr. Peterson: Is it the claim of the government we have incorporated any moisture in this butter?

Mr. Jaques: Undoubtedly. The claim is you have manufactured this butter in a way to cause it to absorb——

—The Court: We will have the arguments after the evidence is in.

By Mr. Jaques:

Q. Now, are any of the so-called factors affecting the moisture content of butter such that the proper-qualified butter-maker does not know of them, and is in position to adjust his churning conditions to control them?

197 A. No, they are generally understood by bona fide butter-makers.

Q. It is a fact that the water content of finished, washed, butter is not the same water as was originally in the cream, but is in part composed of added washing water?

Mr. Peterson: Objected to, no foundation laid for the question showing competency of the witness to testify, and it already appearing, by the expert of the government, that the moisture content is the same before and after washing, and, at least, is not increased.

Mr. Jaques: I wanted to show that the wash water took the part of the other water that was in the butter.

The Court: I understood the question, whether the water finally left in the butter was the identical water that was in the butter before it was washed, or whether part of the water was wash water that had replaced some of the water originally in it. Do you understand that question (Addressing the witness)

The Witness: Yes sir. [A.] I would answer it in this way; that a physical examination of butter reveals, by the color of its brine, whether the butter milk has been thoroughly eliminated. If it has not been eliminated, it would show a milky brine, and if it shows a clear brine, it shows that the butter milk serum has been eliminated, and exterior water—this extraneous water has been added, or is present.

By Mr. Jaques: Q. Now, the testimony in this case indicates that this water—or there is testimony indicating that this butter, all of it, was in excess of 16 per cent moisture.—I don't know as I know just how to ask the question—but—How would you account for more than 16 per cent moisture, in your opinion would it have been in the water,
198 without a process having been used, or manipulation, to cause it to be there—in such amount—over 16 per cent, running up to 17, pretty near 18?

Mr. Peterson: Objected to. No proper foundation has been laid for the question, and, on the face of the question, any answer would be purely conjectural, and on the further ground that the question is not material or relevant to any of the issues in this case.

Mr. Jaques: Withdraw the question.

By Mr. Jaques:
Q. Now, in normal conditions—in ordinary churning of butter, manufacturing butter, and using cream that comes from creameries, manufactured in the usual way, carrying out the methods of ordinary churning, manufacturing, to get quality of butter, and not attempting to control the moisture, what water content would result?—in your opinion?

Mr. Peterson: That is objected to on the ground no proper foundation has been laid.

The Court: I don't think that question can bring out an answer of any value here. If you will state your question, giving him the kind of cream that is used and the temperature used in churning, and the length of time that is used in churning, then you may ask him whether 16 per cent of

The Witness: A. It is generally understood the moisture controlled is divided into two parts; one is retaining, and the other one is incorporating. The more exact way of controlling the moisture is to work it down, or to make a moisture test when the butter is partly worked. And then if it is below 16 per cent, and you have a thousand lbs. of butter in the churn, you want to bring it up to 15½, add 5 pounds of water, close your churn covers, and work this water into the butter.

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Mr. Jaques: Withdraw the question.

By Mr. Jaques:
Q. Now, in normal conditions—in ordinary churning of butter, manufacturing butter, and using cream that comes from creameries, manufactured in the usual way, carrying out the methods of ordinary churning, manufacturing, to get quality of butter, and not attempting to control the moisture, what water content would result?—in your opinion?

Mr. Peterson: That is objected to on the ground no proper foundation has been laid.

The Court: I don't think that question can bring out an answer of any value here. If you will state your question, giving him the kind of cream that is used and the temperature used in churning, and the length of time that is used in churning, then you may ask him whether 16 per cent of

water can possibly result without some process being used to make it 16 per cent. That is what the question means. If he has heard the testimony as to how this particular butter was produced, he may state whether in his opinion the butter would have had 16 per cent of moisture unless some process was used to artificially increase the water content.

199 Mr. Peterson: I don't like to have the court try counsel's case.

—The Court: Some other process besides what has been stated.

By Mr. Jaques:

Q. Given a butter containing an excess of 16 per cent moisture, do you think that such a result would be obtained unless either the butter was so churned as to be in a condition to retain an excessive quantity of water, or worked in such a manner as to absorb, or take up, an excessive quantity of moisture?

The Court: What do you mean by the word "excessive"?

Mr. Jaques: We have different ideas about that. I call 14 per cent or more excessive.

The Court: People may think 16 per cent not excessive.

By the Court:

Q. You have made a considerable quantity of butter in your time as a butter-maker? A. Yes sir.

Q. What amount of moisture should good quality butter contain? Or what have you found from your experience in churning would it contain?

The Court: If he has any statistics showing the water content in butter that has been produced in this state during the last five or ten years, he can produce them.—If that is what you want (addressing Counsel for Defendant).

Mr. Jaques: I want to show by the witness what his experience in manufacturing butter, as to the water content, is, as to what water content he finds in butter manufactured in the ordinary, usual way.

The Court: He manufactured himself?

Mr. Jaques: He manufactured himself, or anybody else.

The Court: I suppose the table of statistics would probably answer that, as to butter produced in this state.
200 If he has any personal knowledge outside, he may state that.

By Mr. Jaques:

Q. You manufactured butter for twelve years? A. Yes sir.

Q. In this state, Minnesota? A. Yes sir.

Q. What twelve years were they?
A. 1896 to 1907, inclusive.

Q. And how would you find, in manufacturing that butter, the run of water content of manufactured butter, manufactured by you, was?
A. I have no knowledge what the water content was the first years; but the last three years of course we were striving to get as close to the 16 per cent as we could, and we modified our methods from that which I was taught at the dairy schools so as to reach this end.

Q. Before you modified your methods to put more water in—what water content did you get?
A. We had no moisture test. I could only judge by the over-run then.

Q. About when did this modification in the method of manufacturing butter, in regard to water content, occur?
A. If I remember, about—between—1904 was the first that I heard of this—the possibility of working water into butter.

Q. Before that, you just went on and manufactured butter for quality, didn't consider the water control it or anything else; is that right? A. Yes sir.

Q. Then there came a change in the business, and you commenced to try to hold all water in the butter you could, or get it to absorb as much water as possible?

Mr. Peterson: Objected to as immaterial what the witness tried to do.

By Mr. Jaques:

Q. You were creamery inspector throughout the state, and noticed the working in creameries. What did the creameries in the state do with regard to that water content, at this time you speak of?

A. Our instructions were to see to it that no butter
201 was made in the state that exceeded 16 per cent.

Q. Your instructions? A. Yes sir.

Q. How were the creameries working, do you know, can you tell of your own knowledge, in regard to the water content?

Mr. Peterson: Objected to as immaterial; no foundation laid, not material to any of the issues in the case.

The Court: He may answer that, if he understands the question.

By Mr. Jaques:
Q. What were their creamery operations in order to increase the amount of water in butter? Do you know of any of [the]? A. As I have stated, the methods were changed.

Mr. Peterson: Objected to, no proper foundation laid for the question, and not relative to any of the issues in the case, it appearing how the butter in question was made.

The Court: The question is, what change was made in the methods of making butter, between and 1901?

The Witness: Yes sir.

The Court: He may answer.

The Witness: A. The principal change was in the temperature of the wash water, and also of the working process.

By Mr. Jaques:
Q. The temperature of the wash water would affect the moisture content? A. Yes, it does.

Q. In what way?
A. If wash water is added at a higher temperature than the butter milk that is drawn off, it tends to soften the butter so as to retain the moisture.

Q. Retain, or absorb? A. Retain it.

Q. Retain the wash water? A. Yes, it would be.

Q. Any moisture——
—A. Any moisture that was present, yes.

Q. I think there is testimony in this case that the
202 wash water at a temperature of 50—I recollect it, 58 to 60——

—Mr. Peterson: Well water.

Mr. Jaques: The temperature here is 58 to 60, as I remember it, the temperature of the wash water.

Q. What effect would that have?

Mr. Peterson: The record is that it was well water temperature, 48 to 50.

Mr. Jaques: The temperature according to the testimony was 58 to 60, as I recollect it.

I suppose the reporter's record will show.

The Court: The testimony of Mr. Dorrinen was that the temperature of the water was about 58, is my recollection—the temperature of the wash water?

The Witness: Yes.

By Mr. Jaques:

Q. Supposing the testimony is the wash water was used at a temperature of 58 to 60, what if any effect would that have on the retention or absorption of water by the butter.

Mr. Peterson: Objected to, no proper foundation laid. My recollection of the record is that well water was used, at a temperature of about 48 degrees, churning temperature of 48.

The Court: He may answer.

Mr. Peterson: Exception. —And the question is a double one.

The Witness: A. At a temperature of 58 to 60, would tend to soften the butter, so as to make expulsion of moisture more difficult, or enhance the retention of it.

The Court: Mr. Forgy testified the temperature was 50.

The Witness: Coming from the well.

The Court: What would your answer be as to that?

The Witness: If I understand that right, the testi-
203 mony he gave was water coming from the well, and the other was when added to the butter there is 10 degrees difference: it is customary to heat the water before adding it to the butter.

The Court: I don't think Mr. Forgy testified it was customary in this concern to heat the water.

Mr. Jaques: I asked him what the temperature of the water was, as it come out of the well. He said it was 50 degrees as it came out of the well. But the other witness, or one witness, testified the water used for washing the butter was 58 or 60.

The Court: You may state what the effect would be, if the water was of the temperature of 50.

The Witness: A. If it was added at 50, it would harden the butter. My judgment would be the butter milk would be at a temperature of more than 50, in order to come within the time specified.

Mr. Peterson: Cream was at a temperature of 48?

The Witness: It is generally understood that the temperature raises during the churning process, due to the friction.

By Mr. Jaques:
Q. What would you say—what in your opinion is a normal content of water in butter?

Mr. Peterson: Well——

—By Mr. Jaques:
—Q. from your experience as a butter maker.

The Court: I can't hear the question.

Mr. Jaques: I asked him what in his opinion was a normal content of water in butter.

Mr. Peterson: Objected to, not material to any of the issues in this case, and that inquiry might be material
204 in some proceeding going to establish a standard of butter fat and moisture in butter.

Mr. Jaques: I want to add to that "creamery butter", and "in the year 1918".

The Court: If you define what you mean by the [work] "normal" he may answer the question.

By Mr. Jaques:
Q. What in your opinion is the average, or normal, content, water content of butter, or rather creamery butter?

The Court: In Minnesota?

Mr. Jaques: In Minnesota (to the witness).

The Court: At the present time or the last five years.

Mr. Jaques: Present time, or during 1918.

Mr. Peterson: That is objected to as immaterial, on the further ground that in the question Counsel incorporated the words "or normal", and the only construction upon the whole question would be the equivalent of asking what is the average water content.

The Court: He may answer that.

The Witness: I don't know, what the average would be.

By Mr. Jaques:
Q. Within what limits would you say butter could be designated as average, that butter might be considered to be normal, properly manufactured; and I am asking that without regard to any supposed regulation of the Internal Revenue Department.

Mr. Peterson: Objected to as immaterial on the state of the record, and the question should be the ranges of moisture content in butter, according to the knowledge of the witness.

The Court: If that is confined to a certain period, certain place——

205 By Mr. Jaques:
Q. In Minnesota, and during the last two or three years.

By Mr. Peterson: I understand that question is, What are the ranges of moisture content in butter?

The Court: Yes sir.

Mr. Jaques: I didn't ask him about "ranges".

Mr. Peterson: The question is objected to, so far as the use of the word "normal" is concerned; the question is not objected to so far the "ranges and averages".

Mr. Jaques: I asked another question.

The Court: Objection sustained.

By Mr. Jaques:
From your experience as a butter-maker, and otherwise, what have you learned to be the range of the moisture content of butter, in Minnesota, in the last three or four years,

manufactured in the ordinary way in the creameries, without any effort to incorporate water?

Mr. Peterson: Objected to on the ground that no proper foundation has been laid for the question, the witness not knowing whether in the particular analysis of moisture content of the particular butter, the details of the manufacture that entered into the butter. I think if the witness were interrogated as to his finding made as to moisture——

—The Court: Made in Minnesota.

Mr. Peterson: Counsel can't assume effort was made to expel or not to expel water.

The Court: He may answer that.

Mr. Peterson: Exception.

The Witness: I would prefer to answer that in this way, according to my own experience, leaving aside all thought of composition of butter, but simply striving to make the highest possible quality, as to regard texture and body,
206 color and salt, that the raise would be between 12½ to 14½, possibly 15, per cent.

Mr. Peterson: I move to strike out the answer as not responsive to the question.

Mr. Jaques: This was unsalted butter that we have in this case, and as I understand from some of the testimony, couldn't say whether it is true or not, unsalted butter contains a high percentage of butter-fat.

The Witness: A. There is a discrepancy as to the salt content—the fat would replace the salt, the other constituents being equal.

By Mr. Jaques:

Q. To that extent it would contain a higher percentage of butter-fat, and that butter on the market is any consideration given to that fact?

A. Yes sir. We are paying two cents a pound more for unsalted butter than we are for [unsalted] butter of equal quality—buy it in a wholesale way.

The Court: Unsalted butter generally is more butter-fat?

The Witness: Yes sir.

The Court: How about water content?

The Witness: That would be about the same.

The Witness: We pay about 2 cents more——

Cross Examination of Ole A. Storvick,

By Mr. Peterson:

Q. I will take up the cross-examination where your testimony left off. His Honor made some inquiry about the butter fat and the constituents of butter. As far as right here material, the constituents of butter, butter fat,
207 water and the [casine] and salt, in the case of salted butter, aren't they—the constituents of butter are butter fat, moisture, salt and [casine]?

A. Yes sir. Those are the principal ones.

Q. And your total content is on the basis of 100 per cent, isn't it? A. Yes sir.

Q. Your [casine] is about what per cent?

A. I should say approximately 1 per cent.

Q. And the moisture content of say—we will say 16 per cent, just for illustration? A. Yes sir.

Q. A [casine] content of 1 per cent and a moisture content of 16, gives us 17 per cent, doesn't it, adding the two together? A. Yes sir.

Q. Now, in the case of unsalted butter, the rest is butter fat, isn't it? A. Yes sir.

Q. That would be 83 per cent, wouldn't it? A. Yes sir.

Q. Or, in other words, coming back to the question His Honor asked, and making a general comparison between unsalted butter and salted butter, unsalted butter, the moisture content remains the same—contains additional butter fat, the equivalent of salt in the case of salted butter?

A. Yes sir.

Q. Now, you heard the tests, that moisture tests that were read off by Mrs. Scheĭpl, the woman who made the moisture test in the process of manufacture of this butter?

A. Yes, I did.

Q. And they all run under 16, didn't they, except two?

A. I don't recollect. I presume that is about right.

Q. Well, you heard how the butter was made, there was a

preliminary step—if it runs over 16 work it some more, until it is down to 16? A. That was the testimony.

Q. That is the way butter is made, isn't it, generally?—I will withdraw that. That is the testimony here?
A. That was the testimony, yes sir.

208 Q. Are you able to say that the average of all her tests were under 16 per cent moisture,—aren't you?
A. I presume that would be right.

Q. Can't say it is? A. I have not made a calculation.

Q. Every one she read off was under 16, you heard that?
A. Yes, sir.

Q. The average would have to be under 16, moisture content, according to her testimony?
A. That would be the result.

Q. Then you would add 1 per cent for the [casine], speaking in a general way? A. Yes sir.

Q. 1 per cent for the [casine]. And your moisture under 16. And that was unsalted butter? A. Yes sir.

Q. So your total of the butter here accord with the moisture tests made by Mrs. Scheipl, and assuming it to be true,—the total of the moisture and of the [casine], or curd, is under 17 per cent, isn't it?
A. Yes sir. I am assuming the curd to be 1——

Q. Then, assuming those things to be true, what would be the butter fat content of all this butter that is involved here?
A. Approximately 83.

Q. 83-plus? A. Yes sir.

Q. 83-plus, is that correct?
A. Yes, if the moisture is below 16, and the [casine] is 1.

Q. Assuming the moisture to be under 16? A. Yes sir.

Q. And your [casine] 1? A. Yes sir.

Q. Then your butter fat would be 83-plus, wouldn't it?
A. Yes, sir.

Q. That is relatively very high, isn't it, for butter fat?
A. No, I think it is low for unsalted butter.

Q. I am talking about all kinds of butter?
A. We are talking about this butter.

Q. I ask you this, then—that is about the average of unsalted butter, isn't it? A. No sir.

209 Q. Well, if the average was higher than that, it would be less than 16 per cent of moisture, wouldn't it?
A. Yes sir.

Q. But, with moisture under 16 per cent, which is in accordance with your teachings, and assuming your [casine] to be 1 per cent? A. Yes sir.

Q. Your unsalted butter would be 83-plus, wouldn't it?
A. Yes, sir.

Q. Now, we will take all butter—most butter is salted?
A. Yes.

Q. In other words, the unsalted butter is specially made for a special trade? A. Yes sir.

Q. Brings a higher price in the market? A. Yes sir.

Q. Has to be carefully made, with reference to keeping qualities, doesn't it?
A. That would depend upon the material, yes sir.

Q. Making unsalted butter requires the caution of careful making? A. That is true of all qualities.

Q. And it is true especially of unsalted butter?
A. Well, I wouldn't say specially. I would say it was true of all butter.

Q. But salt is a preservative, isn't it? A. Yes sir.

Q. Or, in other words, with salt in butter, you might have butter that was not washed with the curd and the butter milk washed off not quite so careful, and your butter would keep, whereas it would not keep well if it were unsalted?
A. That question is debatable.

Q. It is a debatable question whether the tendency of leaving butter milk in the butter or curd in the butter?
A. No, that is not debatable, but the question of unsalted or salted butter is debatable.

Q. You mean as to its keeping qualities? A. Yes sir.

Q. But we generally regard all as a preservative?—I don't care to go into this too much in detail; salt is generally regarded as a preservative?
A. I am stating that the question of quality, the keeping

quality of salted butter and unsalted butter is debatable whether the same quality of cream—it is not settled.

210 Q. The point I was getting at was, the amount of butter fat? A. Yes sir.

Q. That is considered the food product, is it not, in butter? A. Yes sir, it is.

Q. And most butter is salted? A. Yes sir.

Q. Now, you have read a good deal—there has been a good deal of discussion, hasn't there, about standards of butter? A. Yes sir.

Q. And by standards, we talk and we study, and we debate, upon the amount of moisture in the butter? A. Yes sir.

Q. Whether the standard should be butter fat or moisture or both? A. Yes sir.

Q. That is a general question of standard of butter, that is the unanswered question. Butter fat is a food product? A. It is the most valuable of the ingredients.

Q. Well, as far as this butter is concerned, the ingredients are 1 per cent curd, water and butter fat, aren't they? A. Yes sir.

Q. You say you regard butter fat more valuable than the water? A. Yes sir, that is the wash we buy.

Q. That is the wash you buy. How much butter fat are you buying in getting here on this butter, assuming these tests to be true, around 83 per cent? A. Yes sir.

Q. In all your standards of salted butter, what is your standard?

A. The standards, as far as I know, are all based on salt butter.

Q. What is your standard based upon, salt butter, in the discussions which have come up, where you have been present, and where you participated,—what was the discussion and what was the teaching about butter fat, in the case of salted butter,—what is the standard that is recommended of butter fat in the case of salted butter?

A. That is various [standard] are recommended.

Q. What standard does Mr. James Sorenson, Dairy and Food Commissioner, of Minnesota, what standard does he recommend, butter fat standard, salted butter?

A. He will testify himself.

211 Q. I am asking you if you know?
A. I don't know what his exact standard is for butter fat. We have not any in this state.

Q. I want you to be fair with me. Now, you have heard a lot of discussion about standards of butter, haven't you?
A. Yes sir.

Q. Don't you know that the legal standard of butter fat, according to Minnesota law, is 80 per cent?
A. Up until the last legislature made
I have been away from the state this winter; I have not kept in touch.

Q. Do you know Professor G. L. McKay? A. I do.

Q. He is a writer on butter, is he not? A. Yes sir.

Q. And as these matters go, he is an authority upon butter, is he not—he makes a study of it?
A. He was considered an authority at that time.

Q. Your mean in 1918?
A. This book was written prior to that.

Q. He wrote his book earlier than that (Counsel referring to Exhibit G)? A. Yes sir.

Q. He is still alive? A. Yes sir.

Q. Do you know him personally? A. Oh, yes.

Q. I will show you this little pamphlet in my hand, of his book, "Butter Bulletin No. 12", issued by George L. McKay. ["] That is the McKay you are talking about?
A. Yes sir.

Q. Then I will ask you as a preliminary question, if Mr. McKay is not regarded as an authority upon butter in the dairy business, just as Mr. Sorenson and yourself are authorities upon butter? A. Yes sir.

Q. Now, this bulletin, Plaintiff's Exhibit G—this appears to be a publication by Professor McKay, does it not?
A. There is no statement made as to the author of the bulletin. His name appears upon the front side here.

Q. He is an authority, isn't he?
A. Yes, he may be considered an authority.

212 Q. Just turn to page—there is a discussion here of Butter Standards; just run through, as a preliminary matter, the matter preliminary to the question, the pages where the bulletin is opened before you, for the purposes of seeing in a general way what it is about. The things you are reading there (to himself), have to do with the butter fats standard in butter, as recommended by the different dairy professors throughout the United States, does it not?

A. Yes, that is the views of State Dairy Commissioners on Butter Standards.

Q. Now, do you know, Professor M. Martinson of the Iowa State College? A. I do.

Q. He is here in court, isn't he? A. Yes sir.

Q. And don't you know that his recommendation for a standard of butter fat in butter is 80 per cent butter fat?

Mr. Jaques: Objected to as incompetent, irrelevant and immaterial; he can talk for himself.

The Court: I don't think it is very material.

By Mr. Peterson:

Q. Do you know what the general recommendation of dairy experts on Butter Fat Content of Unsalted Butter is? Answer that by "Yes" or "no".

A. I have not seen enough so that I would say [that] the general recommendations have been. I have never seen the booklet before; that was given out, I believe, just to the members of McKay's constituents.

Q. I am asking you if you know what the recommendation is? A. I couldn't state what the average was.

Q. Do you know the recommendation as to butter fat content of—what the teachers and dairy professors throughout the United States, or some of them, is?

Mr. Jaques: Objected to as incompetent, irrelevant and immaterial.

The Witness: A. I might say, those that I read there——

213 —The Court: The question is if there are any new recommendations, and, if he knows, what they are. He may answer the question.

The Witness: I was not present at this hearing when these facts were gotten together, and I have not seen them published complete, so I couldn't make a statement as to that.

By Mr. Peterson:

Q. I don't want to have you hedging on that.

The Witness: If you will give me the book, I will be glad to read the figures. It is not fair for you to hold the figures——

Q. (Counsel hands book to the witness).

Mr. Jaques: I object to any such proceeding as giving figures from a book he doesn't know anything about.

By Mr. Peterson:

Q. Do you know what the recommendation of Professor Mortenson is as to the butter fat contents? You testified a little while ago you had made a study of the butter business, including foreign standards?

A. I have read the foreign standards.

Q. Now I will ask you if the foreign standard of Denmark, in the case of export butter is not 16 per cent, and home-consumption 20 per cent, moisture content?

A. My understanding that 16 per cent—I hadn't heard of the other standard.

Q. That is moisture content, is it?

A. That is my understanding.

Q. Your [casine] would be 1 per cent,—the same, wouldn't it?

A. I have not seen any figures as to the curd content of Danish butter.

Q. It would have to be some determinate—has to be some [casine] in all butter? A. Probably so.

Q. That is the solids that is the action when you entirely consume it when it remains?

A. No, curd is the [biprudinous] (?) matter—the [casine]——

214 Q. You don't know about the 20 per cent?

A. We have got some salt in Danish butter, yes sir.

Q. What is the fair range?

A. The salt in Danish butter is very low, probably not exceeding much over 1 per cent, of what I have seen.

Q. Not exceeding 1 per cent?
A. You see, the English market demands a very low salt product.

Q. You are talking about export butter?
A. I am talking about the butter I have seen coming to the country.

Q. Danish butter exported to England, you are talking about in your last answer?
A. They are manufacturing dairy butter to satisfy the English trade, and we are only an inside Denmark.

Q. 1 per cent salt and 16 per cent moisture, and you have to have some [casine,] or curd, don't you? A. Naturally.

Q. Well, then, assuming that the Danish standard moisture content, as you have said, what would be your residuum butter fat, of Danish butter,—be under 83 per cent, couldn't it?
A. Hardly.

Q. You have got 16 per cent moisture, 1 per cent salt?
A. Yes sir.

Q. Very low salt content? A. Yes sir.

Q. And you have got 1 per cent [casine]? A. Yes sir.

Q. That is 18. Assuming those to be correct, would leave you 82 per cent? A. Yes sir.

Q. And if you had more salt than that, in the case of solid butter, your butter fat would be less than 82 per cent?
A. Yes sir.

Q. Don't you know that the moisture content of French butter, according to the French standard, is 18 per cent?
A. If I remember correctly they have two standards in France.

Q. What are they?
A. I believe one of them 16 and the other 18.

Q. 18 home consumption, and 16 export?
A. There are two classes of butter, and it is not quite clear to me, in connection with that standard.

215 Q. As far as your knowledge goes, there is a standard of 18 per cent moisture in French butter?

A. I have heard of that.

Q. Don't you know that it is the aggregate weight of authority and recommendation bearing upon butter fat standards, that the butter fat in the case of salted butter shall be 80 per cent? A. Somewheres about that.

Q. That is right? A. Yes sir.

Q. That is all I have been trying to get at.

The Witness: yes, sir.

Q. You know that from your experience and your teaching? A. According to my reading.

Q. And isn't it your recommendation that 80 per cent butter fat is a proper standard in the case of salted butter?
A. I believe that would be a fair standard.

Q. You are talking about Minnesota butter, which is the best butter in the world? A. We think so.

Q. So that, on the basis of that standard 80 per cent butter fat, we have got here 3 per cent more butter fat in this butter, on the basis of your moisture test, haven't we?
A. On the basis of your moisture test.

Q. On the basis of your moisture test? A. Yes sir.

Q. Now, the average of the moisture tests here made by the chemists of the government is 16.76. Just write down "16.76", will you please. (This the witness apparently does). You can add to that a percent for the [casine,] 1 per cent, and your total of that is what? A. 17.76.

Q. Now, subtracting that from 100 will give you the butter fat content? A. Yes sir.

Q. Will you please do it. A. 82.24.

Q. 82.24 per cent? A. Yes sir.

Q. Based upon the analyses of the government, and assuming a [casine] content of 1 per cent? A. Yes sir.

216 Q. That is a fair assumption, isn't it? A. Yes sir.

Q. Then, in place of moisture or salt, we have got 2.24 butter fat—having reference to a butter fat standard of 80 per cent? A. Yes sir.

Q. Then we have got 2.24 per cent of butter fat over and 80 per cent, which stands for either moisture or salt in the case of solid butter? A. Yes sir.

Q. Butter fat is a more substantial food product than water or salt? A. Yes sir.

Q. Butter fat is worth about how much a pound—I don't care about that.

A. I have the market quotations, if you wish to have them.

Q. You made some reference to Navy Butter, didn't you, in your testimony, and the specifications as to the water content of Navy Butter are what? A. In what particular year?

Q. 1918.

A. 1918 there were 13½ for the tinned butter, that is classed as 221, and Class 222 is butter that was packed under specifications used for Coast service at the training station, 14 per cent was permissible.

Q. The Navy Butter was put in tins upon the man-of-war, and naval vessels? A. Yes sir.

Q. And that is a specification made by the Government, and they don't care to buy the butter unless it has that water content? A. Must comply with it.

Q. And in the making of any butter, your tests shows over that, that would be eliminated, as far as your Navy butter is concerned? A. Wouldn't accepted.

Q. In making Navy butter, you manufacture the butter with the same general processes that you do other butter, speaking generally? I mean it is made from cream?

A. Yes sir.

Q. And it is churned? A. It is churned.

217 Q. And you have a moisture test on it at some process in the churning? A. We make a moisture test.

Q. You make that to find out the moisture content?

A. Yes sir.

Q. And if it is over the specification, you work out some more moisture, don't you?

A. In order to be accepted, it must not exceed the limits.

Q. Answer my question; in making Navy Butter, at a certain stage in the process you make a moisture test?

A. Yes sir.

Q. And if over your specification, you work out some more moisture?

A. We simply state what it is, and it is for them to do

what they want to—unless they comply with the specifications we can't accept it.

Q. In making Navy Butter, if you get a moisture content of 14, and your specification is 13½, what do you do—work out some more moisture, don't you?

A. In order to be accepted must be—yes sir.

Q. Either that, or you stop working it, because you are afraid you will injure the grain or [testure] of the butter, and therefore you wait for some other test that is lower than 14, one or the other, isn't it? A. Yes sir.

Q. So your moisture content specification covering Navy Butter simply means that that butter is working until your moisture content is down to the specification?

A. Well, it may not be worked down to that. I may normally come below that without this, in the natural course of manufacture.

Q. "It may normally come"—by that you mean when you are making that and you make a test, you may find a moisture content of 35, may you not? A. Yes sir.

Q. And you would call that normal?

A. For that churning.

Q. And if the churning was 14.1, it would be normal for that churning, wouldn't it?

A. That would be the determination for that churning.

218 Q. It would be normal for that butter? A. Yes sir.

Q. If it were 14.1, or 15.5, you would work out some more moisture?

A. If you were striving for 13½, in this particular—yes sir—the creamery could use it in either class.

Q. Of course they would. And so, if it was 15.5, it would not be Navy Butter, but it would be good butter, and be used for some other consumer? A. Might be.

Q. But what I am getting at is, your Navy Butter has a certain specification, and in order to comply with it you have got to work out moisture so as to reduce the total moisture content provided in the specification? A. Yes sir.

Q. That is all there is to it, isn't it? A. Yes sir.

Q. That is right? A. That is right.

Q. Now your increased price of Navy Butter over the regular market is what?

A. That varies with the different years.

Q. Well, in 1918, about what?

A. The Plato—the contract they were working on, were getting, as I remember, 3 cents over.

Q. Three cents over—they were getting 3 cents over, to be exact, for the 13½, and 2¾ for the 14 per cent moisture.

Q. Now, take Navy Butter, 14 per cent moisture; that is good for the Coast Trade, isn't it? A. Yes sir.

Q. How much salt in Navy butter? A. 2½ to 3½.

Q. We will call it 3 per cent. Just write down 14 per cent moisture. 3 per cent salt. How much [casine]? A. 1 per cent.

Q. Add those. (Which the witness apparently does). What do you get? A. 18.

Q. Subtract from 100? A. 82.

Q. 82 per cent butter fat? A. Yes sir.

Q. That is less than the average here, isn't it? A. Yes sir.

Q. Butter fat is the food—— A. This is solid butter.

Q. I am making a comparison here between the butter fat in that kind of Naval Butter and the butter fat that is involved in this case.

219 A. You are comparing two different kinds of butter.

Q. But I am getting at the amount of butter fat.—That is the food product?

A. That is the food product.—Don't have to pay 60 cents a pound for salt.

Q. Butter fat is more valuable than salt? A. Yes sir.

Q. So we have got more butter fat in the butter that is involved here, based both upon analyses of the government, and our analysis—You have got more per cent of butter fat in the butter that is involved here, based both upon the analyses of the government, and upon our own analyses, than we have butter fat in the case of Naval Butter, with 14 moisture specified and 3 per cent salt, and 1 per cent [casine]?

A. Certainly; but you are comparing two different kinds of butter.

Q. I am asking you if you don't have more butter fat in

the one than the other. You have got 82 per cent butter fat in the Naval Butter, and 82.24 in ours? A. Yes sir.

Q. Now, you made some general observations in your testimony based upon overrun, and you gave certain figures, that in 1918 the overrun, according to the statistics compiled by the Dairy and Food Commissioner, were 23.31?
A. Yes sir.

Q. In order to have it clear to everybody, in order that we understand each other, and I may understand you, you mean by that, do you not, that for every 100 lbs. of butter fat with that overrun, you would be making 123.31 pounds of butter?
A. Yes sir.

Q. Or, in other words, more pounds of butter can be made than there are pounds of butter fat content?
A. Butter fat purchased that is what I mean, butter fat purchased.

Q. And, as the business is now carried on, the cooperative creameries and all creameries, the farmer is paid on the basis of the butter fat content, as determined by what is known as the Babcock Test, so much for the butter fat?
A. Yes sir.

220 Q. That is because that is considered the valuable product and food product? A. Yes sir.

Q. And the great constituent of butter. 100 lbs. of butter fat will make around 125 lbs. of butter, or 123.31, to be accurate? A. As I remember the figures.

Q. The tendency during these recent years in cooperative creameries, which are what states generally?
A. Cover all——

Q. The tendency in the manufacture of butter during these recent years has been that the overrun has been increasing? A. Yes sir.

Q. And putting that in a general way, it means that we have been making more and more pounds of butter from the same number of pounds of butter fat? A. That is correct.

Q. That is what you mean? A. Yes sir.

Q. And you say it has been the teaching of the State Dairy School to do that? A. I didn't state that.

Q. But that has been the tendency of cooperative creameries and all creameries? A. I believe so.

Q. To make more butter out of the same number of pounds of butter fat? A. Yes sir.

Q. Of course an element in that is that the science of butter-making is improving and the facilities are improving also? A. Yes sir.

Q. The dairy business has grown up in a wonderful way since 1896 and '98, in proportion? A. Yes sir.

Q. The statistics that you give there cover both cooperative and private creameries? A. Yes sir.

Q. Are you able to testify in a general way readily the number of cooperative creameries and the private creameries? A. They are listed here.

Q. The total creameries you have there gives some number?

A. 18—there were 613 cooperative, 148 individual,
221 creameries, and 45 creameries classed as centralized, which received cream by rail.

Q. And that is a fair general comparison covering the other years, isn't it—or, relatively, your total number of cooperatives would be larger?

A. There is very little difference.

Q. I just want it in a general way.

A. Yes sir, there is no material difference. There is a slight increase in total creameries up to I believe 14——

Q. But relatively the smaller creameries and the number of cooperative creameries outweigh the other? A. Yes sir.

Q. In somewhat the same proportion that you gave?

A. Yes sir.

Q. Well, now, this is fair too, isn't it, that with this increased overrun, and the tendency of it throughout these years, the quality of butter also has improved, hasn't it?

A. No, I am sad to say it has not.

Q. We claim to make during these years good butter in Minnesota? A. We do, yes.

At this point in the trial a recess was taken to 2 o'clock p. m., June 22nd, 1921.

Proceedings of June 22nd, 1921. Afternoon session.

OLE A. STORVICK recalled, for further Cross Examination.

By Mr. Peterson:

Q. You made some reference to Minnesota butter during these recent years in the last questions and answers that were given to you. Minnesota, during these years covered by this period when the overrun has been on the increase has, nevertheless, continued to make prize butter, and win prizes for butter in the national contests? A. Yes sir.

222 Q. Now, one or two questions about temperature in churning. You, of course, were not present when this butter was made? A. No sir.

Q. And you testified that, in a general way, if the size of the churn was given and the amount of cream in the churning and the temperature that it took to churn the butter were given, you could make an estimate of the temperature? A. The amount of butter—not the amount of cream.

Q. The amount of butter would be the same, if the relative amount of butter fat in the cream were the same?

A. But it would affect the length of the churning, the richness of the cream affects the length of churning.

Q. Given the amount of the butter and the size of the churn and the time of the churning, as you think, you could give a pretty fair guess on the temperature? A. Yes sir.

Q. Well, those things are done—the temperature and the time of the churning and when it is churned and so on, those things are done in the judgment of the butter-maker?

A. Largely regulated from day to day.

Q. So, churning from day to day, you are able to estimate with pretty good accuracy what your finding will be in a particular churning, aren't you? A. Yes sir.

Q. Of course, in the revolution of the churn and in the churning of the cream in the churn, there is some generation of heat? A. Yes sir.

Q. And when the churning is done the temperature within the churn is somewhat higher than the temperature of the cream when you put it into the churn? A. Usually so, yes.

Q. Well, water is commonly used, is it not, in washing?

A. Yes sir.

Q. And it is a necessary process to wash the butter?

A. Yes sir.

223 Q. Customary? A. Yes sir.

Q. And in doing that you use about two-thirds up to water content the equivalent about of the original cream put in the churn? A. That is approximately so, yes sir.

Q. Well, using water with a higher temperature in washing, would merely leave the butter, as you testified, a little soft? A. That is all.

Q. And still opportunity after that to remove and reduce the water content to below 16 per cent?
A. Unless the butter is too soft—then the more difficult to remove the surplus water.

Q. But it can be expressed out? A. I believe so, yes sir.

Q. And churning at a lower temperature gives you a relatively harder granular butter fat substance after the churning? A. Yes sir.

Q. You call it butter?
A. Call it butter after it is churned, yes sir.

Q. Or, putting it this way: Using the cream at a somewhat lower temperature, you get a relatively harder butter, and the granular substance which we will call butter, after the churn? A. Yes sir.

Q. And then it is washed and then it is tested for moisture?
A. It was usually worked first; if it is salted it is solid and worked, until the salt is about dissolved, and the test is made.

Q. After the churning it is washed?
A. No, it is washed first; that is the ordinary procedure. Some butter-makers work it in the wash water, but I don't know that that was the case here. I didn't get that from the testimony.

Q. And when this washing process is going on, the lids are left open, and the water drains off?
A. After it is washed, yes sir.

Q. That wash water is drained off by leaving the lid open?

A. I am not sure. Some butter-makers let it out
224 through the plug in the end of the churn, and others——

—Q. In any event, it is a matter of draining it off?
A. Yes, it is drained.

Q. And your moisture content is taken and if over 16, by working it some more, it may be reduced to under 16, by pressing more water out? A. Yes sir.

Q. That is the customary way?
A. That is one of the methods.

Q. You have been a butter-maker, haven't you?
A. Yes sir.

Q. You have tested [butted], after churning, and after washing, haven't you?
A. No, I have never made any test of them until they worked.

Q. That is what I mean. A. Yes sir.

Q. You have made butter, and in the process of making it, you made the moisture content test? A. Yes sir.

Q. And you have had it run over 16?
A. In the finished butter, you mean?

Q. Did you hear the testimony of Radke, the butter-maker, yesterday? A. Yes sir.

Q. He said something about no man knowing what the first moisture content test would be. You heard that testimony, didn't you? A. Yes sir.

Q. And, so that moisture content test is made after the butter is churned and washed and worked, to find out what it is? A. Yes, sir.

Q. And you have made that in your own experience as a butter-maker? A. Yes sir.

Q. In hundreds and hundreds of cases? A. Yes sir.

Q. And you have had it run over 16?
A. I have had it ran over 16 and I have had it run under 16.

Q. And you have had it go over 17?
A. No I don t believe I have.

Q. In any instance?
A. I don't remember I had any butter 17 per cent.

225 Q. I mean the first time you make the moisture content test? A. I understand you.

Q. But many times you have had it run over 16?

A. Not very often anything like it—my experience—as I stated this forenoon, that it runs usually below that.

Q. I am asking you, in your experience has it run over 16?
A. Yes sir.

Q. And when that happened that was the normal moisture content of that particular piece of butter, wasn't it, when it was churned in the ordinary way?
A. That was the moisture content of the butter.

Q. That was the moisture content of that particular butter, wasn't it? A. Yes sir.

Q. In a general way, and constitutionally, it was there?
A. It was there.

Q. Without any effort on your part to incorporate part is what I am getting at?
A. There is some cause for it being there.

Q. It was in the original milk, wasn't it?
A. No, it was—it entered in during the process of manufacture.

Q. And it was found there when you made the moisture test? A. Yes sir.

Q. How would you get it out? A. Simply work it out.

Q. And you heard the testimony here about the first moisture test and in the instance it went over 16 per cent and worked it some more it went 16 per cent? A. Yes sir.

Q. That is what you did? A. Yes sir.

Q. The idea of that is to reduce your moisture content below 16 per cent?
A. If the butter shows higher than 16, certainly.

Q. When it is under, you let it alone, don't you?
A. Try to. It is a business proposition to get as close to 16 as possible.

Q. With you? A. Yes sir.

Q. Well, in a practical way, if the other fellow's butter was close to 16 per cent, and yours was down to 14, you
226 would be in trouble on competition? A. Yes sir.

Q. That applies to everybody, doesn't it? A. Yes sir.

Q. Then, in the butter you have made, you try to run it as close to 16 as you could, your own personal experience?
A. Yes sir.

Q. You say that is all right, do you?
A. I wouldn't say as close to 16 per cent as possible. I have always tried to play safe, not exceeding 15½.

Q. I will ask you this: In your own experience, if you had a test of 15 or 14½, you would ever incorporate water, in your own personal experience? A. Yes sir.

Q. You have done that?
A. Yes sir, I have. That is customary.

Q. Customary with you? A. Customary with me,——

Q. I am simply asking if it was customary with you?

Mr. Jaques: Let him answer the question. He was answering the question, and you stopped him.

By Mr. Peterson:
Q. I will ask you this: You have been a butter-maker?
A. Yes sir.

Q. And you have run a test of 14½? A. Yes sir.

Q. And for what creamery—down at Albert Lea, State Creamery? A. No sir.

Q. Did you work down there at one time?
A. I worked there as helper when I was learning the trade. Bear in mind that was not a state creamery at that time.

Q. I am just getting at what you did. You testified about what you do. And in your own work as a butter maker, with a test of 14½, you have incorporated water? A. Yes sir.

Q. Was that your customary practice? A. Yes sir, it was.

Q. Well, now, where were you a butter maker when you did that? A. At Emmons, Minnesota.

Q. That is down on the state line? A. Yes sir.

Q. The town is named after the Emmons family?
A. Yes sir.

227 Q. Your old home, and my old home? A. Yes sir.

Q. That is a cooperative creamery? A. Yes sir.

Q. And then, your records down there would show a first

moisture content test, and if it was between 14 and 15, you would incorporate some water, and you would have a second test, would you? A. Yes sir.

Q. And how long did you work at Emmons down there?
A. I was there twelve years.

Q. And that was your custom and practice during all the time you worked there? A. No sir.

Q. Not all the time.
A. We were not on with that trick when I first went there.

Q. You did it in your later years? A. Yes sir.

Q. And what other creamery have you made butter in besides the Emmons Creamery?
A. I have made butter in a great many creameries when I was supervising the manufacture of Navy butter.

Q. You wouldn't add water there, so as to get above your Navy specification? A. No sir.

Q. Because, if you did, it would still be commercial butter, if under 16, but it wouldn't be taken by the Navy?
A. No sir.

Q. So you say it is your custom and practice to add water so you could pull it up to as close to 16 as possible?
A. I would aim between 15 and 15½.

Q. You were not present when any of this butter was made? A. No.

Q. And you don't mean to say from your own knowledge and to testify, as to just how this butter was made in this case?
A. I know nothing about it, only the testimony I have heard here.

228 Redirect Examination of Ole A. Storvick,

By Mr. Jaques:
Q. In the instances when you were making butter, and it run a content over 16, were you then making according to this modern process, by which you try to have all the water you can, up to 16?
A. If the moisture on the first test showed 16 per cent. there was something irregular—usually something irregular that happened,—either my temperature had been wrong, or

butter become a little over-churned while he was out in the engine room attending to the other duties.

Q. When you were making butter which at the first test showed water content of 16 per cent or more, were you making that butter with the object of having all the water, or of incorporating water, and having all the water you could, under 16 per cent?

A. Yes, that was my—I aim to have it between 15 and 15½ per cent.

Q. And you were trying to retain and have the butter absorb up to 16 per cent? A. Yes sir.

Q. And when you were doing that, you would sometimes run over the 16 point? A. I would, yes.

Q. But at no other time—You worked down there twelve years, and a number of those years were before this famous regulation of the Department of Internal Revenue was adopted. Before the adoption of this regulation—you were working to add water, or to keep water, or have it absorb water up to 16, did it ever run over 16, working in the old-fashioned way, the first years you were there before the regulation?

A. I had no way of knowing. We used the old-fashioned method at that time. I don't think there was any danger that we approached that—probably down to 11 or 12.

Q. You say quite frankly that was customary with
229 you to endeavor to have the water content of the butter up to as near to 16 as possible, after this rule, and counsel was asking you if you reduced it when it was over 16, and you said that was one method. Now, what is the other method?

A. I explained this forenoon, one is a method of retaining the moisture and coming as close as you can to the mark that you wish to hit; the other one is to work it in with a view to secure a real hard, firm, good body, and then add the water afterward, so as to come up to the mark you set at. My mark is 15 to 15½.

Mr. Peterson: You would be violating the law, according to the District Attorney's contention?

Mr. Jaques: They are all doing it.

The Witness: No, I had my moisture content below 16—15 to 15½.

By Mr. Jaques:

Q. As a matter of fact, in churning butter, manufacturing butter, isn't it more difficult to get a moisture content of 16 per cent than it is to get less? A. Yes it is.

Q. It takes the effort to run up to 16 per cent?

A. Yes, sir. Greater portion of the time you have to make an effort to get it.

Q. Well, now, we had quite a little mathematical test here, and so I will ask you some mathematical questions: If, as a matter of fact, the butter was manufactured as it used to be, containing 10 per cent of water content, then how much butter fat and [casine] and salt,—what would be the butter fat content of [casine] and salt, where the water content was only 10 per cent?

Mr. Peterson: Objected to not material to any of the issues.

The Court: He may answer, if he knows.

By Mr. Jaques:

—Q. Where the water content is 10 per cent of the butter, [casine] 1, and salt 2, how much would be the butter fat in the butter?

A. 10 and 1 is 11, and 2 is 13; 13 from 100—87.

230 Q. And you would add butter, would be 87 per cent butter fat food value? A. Yes sir.

Q. Supposing it was 11 per cent water,—the old average used to be.

Mr. Peterson: Same objection, not material.

By Mr. Jaques:

Q. Then it would be 86 per cent butter fat. Now, taking the unsalted butter—supposing it had a water content of 12 per cent, [casine] 1—— A. That would be 87 per cent fat.

Q. Counsel was asking you about this element of the over-run in butter continually increasing since 1900, and he was asking you what the elements of that increase were. I want to ask you whether the fact that the department fixed 16 per cent water content would be any element in that increase of the over-flow?

Mr. Peterson: Objected to as immaterial, not relevant to the issues in the case.

The Court: He may answer that.

The Witness: A. The figures tend to show that they are approaching as close as they can, within the limits of the law.

Q. Wouldn't that then be an element in the increase of the over-flow?
A. Yes sir. It shows that the methods of manufacture have been modified to reach this end.

Q. The process has been changed? A. Yes sir.

Q. Now, the variance there, of your figures that were entered here, were from 19—— —A. 19.09 to 23.31.

Q. That would be how much of an increase? A. 2.22—3.22.

Q. Of course you couldn't say that all that was increase in water? I understood you to say this morning.

Mr. Peterson: It wouldn't be practical to reduce the water content down to 12 in all the cases, would it?

The Witness: A. No, I think that would be doubtful.

231 Mr. Peterson: Q. Be more than doubtful, wouldn't it?

The Witness: A. Well, it seems as though there was not any doubt about it back in the '80s.

Mr. Peterson: Q. In 1918, and at the present time, and during these recent years, would it be practical for any creamery in the State of Minnesota to express the water out down to 12 per cent?

The Witness: A. No sir.

Mr. Peterson: Q. Would it be practical to manufacture butter in 1918, so as to have a water content of your butter of 12 per cent?

The Witness: A. Couldn't compete.

Mr. Peterson: Q. Wouldn't be practical?

The Witness: A. No sir.

By Mr. Jaques:
Q. What do you mean, when all the other creameries are putting water in the can? A. Couldn't meet competition.

Q. Just as easy to manufacture butter containing, say, 11 to 13, now as it was in 1900, isn't it? A. Yes.

Q. When you say "practical", you have reference to this new process of applying water to the butter?
A. Competition——

Mr. Peterson: Objected to, no basis for the question, as it doesn't appear anywhere in the record any abnormal water has been incorporated in the butter in question.

Mr. Jaques: It is in the record manufacturing butter to contain more water all the time since this rule was adopted.

By Mr. Peterson:
Q. You can have the best butter in the world, can't you, with the moisture content under 16 per cent, and the butter fat content 80 to 83? A. I believe so.

232 By Mr. Jaques:
Q. Then you can have the best butter in the world, can't you, with the moisture content of 10 per cent and the butter fat 90 per cent, can't you? A. Yes sir.

Q. Butter is just as good?
A. I am answering now so far as quantity. I have not in mind the nutritive value, the time I am considering the score of butter.

Q. The lower the water content, of course, the more the nutritive value?
A. The higher the butter fat the higher the nutritive value.

Q. The lower content of water, 10, 11, 12, 13, isn't that butter—don't that butter score as well and have as good a qualitative value as the other?

The Court: You said when you were making butter, if your first test showed you had 14½ per cent water, you proceeded in some way to incorporate some more water in it?

The Witness: I did.

The Court: How did you do that?

The Witness: I would know beforehand how much butter fat I put in the churn, and I could calculate the number of pounds of butter; consequently, if I had 1,000 lbs. of butter in the churns, and I wanted to add 1 per cent, I would add 10 lbs. of water.

The Court: I don't care so much about the content; you would actually put more water in there?

The Witness: I would continue the working process, adding more water, and working it until I got it up to 5½ per cent.

The Court: One time you spoke about an old-time method of making butter?

The Witness: Yes sir.

The Court: What did you mean by the old-time method?

233 The Witness: I had reference to the methods employed at the time I learned the trade; we had at that time no knowledge of its variable composition of butter; we had in mind simply making a high quality of butter which would grade high, and sell well in the market, and it was not paid any attention to—so much attention to the quantity that we got out of it; if we had no losses, there was no effort made to incorporate water or retain water in the butter.

The Court: Well, but what actual change in the process or in the material used was made? Did you use the same kind of churns?

The Witness: Well, the make of churns had but slight—I don't know had much to do with it.

The Court: You don't think the change in the type of churns had anything to do with it?

The Witness: It had some, but not altogether—it was the preparing the cream for churning, and the temperatures employed that—by this we controlled the composition of butter. As I said this morning, one method is to retain the moisture in the butter in the working process, and if we get too low, to add water.

The Court: I understand that. What I am getting at is, what the difference was in the process. You say you used a different kind of churn?

The Witness: There has been new churns come on the market, but it is the regulation of temperature.

The Court: Do you think there is anything due to the change in the churn?

The Witness: Some makes of churns the more easy to in-

corporate water or retain water than other makes, which I could best illustrate by making a drawing on a piece of paper, so that you could see.

234 The Court: You needn't do that. When did these churns come in that you say make it easier to incorporate water, or to retain water?

The Witness: About the time that it was discovered that water could be worked into the butter all the designers of equipment went to work at this.

The Court: When was that? A. About 1890, '91.

The Court: Has there been any particular change in the type of churn used that would increase the amount of water which you would incorporate in the butter, or the amount that would be retained in the butter, since 1890 and '91?

The Witness: Yes.

The Court: When was it next changed?

The Witness: These churns improved from time to time. The first combined churn had the internal working rolls in the center of the churn. Then they set to work and put in rollers close to the edge of the churn, so that would pick up the surplus water and work it into butter as it went over.

The Court: When was the second change in the churns?

The Witness: There has been modifications from time to time, a constant change from about 1900—some improvements made in 1900. The last few years, we didn't know before that; a new churn is being tried out in this city, that I have not seen,—not the working of it; just come out of a shop to be tried out.

The Court: I am thinking particularly of changes that made it easier to incorporate water, or to retain water. You say there were changes in the churn after 1900?

The Witness: Yes sir. The first combination churn that came out had the rollers for working the butter in the
235 middle of the churn, they would stand stationary, fixed, but they would revolve, and the butter be provided and thrown on there; but these rollers were in the center of the churn, away from the bottom of the churn, so consequently it added strength, that would pick up the water and carry it through the churn—would go through the rollers.

The Court: Are those churns you have described in common use now?

The Witness: Yes sir.

The Court: Have been in common use?

The Witness: Yes sir.

Q. For the last twenty years, fifteen years?
A. In 1900, so far as I know, there was but three combined churns on the market. There are now seven or eight different makes of churns.

Q. Is this Victor Churn a churn that is in common use?
A. Yes, it is.

Q. A standard churn? A. Yes sir, it is.

Q. Leaving the churn out of consideration, what other change in the process, or what other change in the materials used, to change the old-style method you have spoken about, to the new-style method?
A. The temperature has been changed, by employing a higher temperature; the butter becomes softer, and it will retain more moisture than the temperature of the wash-water—is sometimes arranged to maintain a softer body, which makes a retention of water in the butter.

Q. Did you keep your temperatures under the old-style method of making butter, temperatures of your cream at which you churned it? A. Took the temperature?

Q. Yes. A. Yes.

Q. Did you take the temperature of your wash-water?
A. Yes sir.

Q. What was the temperature of your churning cream in the old-style? A. Would churn probably a little colder.

236 Q. What was the temperature?
A. That would vary with the condition of the cream, and with the seasons of the year.

Q. What was the range of temperature?
A. In raw cream—cream that had not been Pasteurized, it would vary from 48 to 54.

Q. 48 to 54? A. In the summer time.

Q. Under the old-style methods? A. Yes sir.

Q. What would be the range of temperature of the wash-water?

A. It would be approximately the same as the butter milk drawn off.

Q. What would that be?

A. It might be two degrees or so warmer.

Q. That would be to 56? A. Yes sir.

Q. Those were the temperatures used under the old-style?

A. Yes sir.

Q. Now, you say that raising those temperatures—temperature at which the cream is churned, and the temperature at which the wash-water is put in—are two of the changes from the old-style process to the new-style process?

A. Those are some of the changes, and then the amount of working another—and the design of the churn is the other. There are a number of factors.

Q. You say there is the time of working?

A. Yes sir, the amount of working.

Q. Does that mean the time, or speed?

A. That really means the number of times that the butter has passed through the working rollers, in a Victor Churn, such as used here, a four-roller churn, the butter goes through the rollers twice every revolution; with a churn rolls in the middle of the churn, the first workers that came out, combined churn and workers that came out, it was estimated the butter went through the rollers about twice in every three revolutions.

Q. In other words, was there more working under the old-style method, or less working?

A. No, the present workers is faster than the old-style.

Q. So the butter is worked more under the new-style method? A. Yes sir.

237 Q. Is this socalled new-style method in common use in the creameries throughout the country, so far as you have observed? A. Yes sir.

Q. It is the ordinary, usual way of making butter at the present time?

A. Yes.—They all aim to hold as close as they can.

Q. They all use the method?

A. The method may vary, but they aim at the same result. There are so many conditions that enter into temperatures,

that a "temperature" is an evasive thing—the length of time, the amount of butter in the churn, and the size of churn, will tell more clearly what the temperature is—what temperature to employ, than the temperature itself—the condition of the fat, the richness of the cream, the season of the year.

Q. You have been in a great many creameries? A. Yes sir.

Q. And seen them operate? A. Yes sir.

Q. And know the process that they use? A. Yes sir.

Q. And materials that they use? A. Yes sir.

Q. Did you hear the testimony given here as to the way this butter in question was made? A. Yes sir.

Q. Did you discover in that testimony, assuming it to be true, that there was any material used that was not ordinarily used in creameries in making butter?
A. So far as I know there was no material.

Q. Did you discover, from the evidence, that there was anything in the process that was used that deviated from the ordinary, the usual process used in creameries that you have been acquainted with?
A. Yes, I was surprised to learn that 17 tubs of butter could be made churned in twenty-five to thirty minutes, in that size churn.

Q. Then it was the quickness of the churning? A. Yes sir.

Q. That you think was irregular in that process?
A. Yes sir. It was higher—indicated to me, a higher temperature than the ordinary.

Q. Was there anything else you discovered you
238 thought made it deviate from the ordinary process?
A. There was. It was impossible to follow the process, Your Honor, because there was no evidence showing the number of revolutions that the butter was worked; so I have no way of judging that—the number of times the butter might pass through the rollers. It was not stated so far as I can remember.

Q. What is the usual number of times of passing through the rollers?
A. It will depend a great deal on the condition of the fat and other conditions—of the cream—many factors to be considered there.

Q. You couldn't tell whether the passing through of the rollers deviated from the ordinary, unless you were churning, and you knew the conditions? A. I couldn't tell.

Q. So that, so far as you discovered from the evidence, the only thing in which this process differed from the ordinary process used in other creameries, was in the quickness of churning? A. Yes sir.

Q. That is, the time it was churning? A. Yes sir.

By Mr. Peterson:

Q. You also testified, when I asked you some questions about that this morning, that the time of the churning, the time necessary to properly churn the cream, in the case of the butter-maker working every day, is a matter within his judgment? A. Yes.

Q. That is, if putting the temperature at a certain degree, 48 to 54, and churning from day to day, the experience and the judgment of the butter-maker, indicates to him about the length of time of the churning, and the time it takes to churn?

A. Yes, I stated in my previous evidence sixty minutes.

Q. Just answer my question. The temperature and the experience from day to day of the butter-maker, makes a situation so that, using his judgment, he is able to tell the length of time of the churning, and about how long it has to churn? A. Yes sir.

239 Q. And you were not present over there at the time this butter was churned? A. No sir.

Q. So that the time of the churning may have been entirely consistent with the temperature used and the kind of cream you are using, and the kind of butter-fat and the test of the butter-fat and the kind of churn you were using?

A. The length of time of churning is not consistent with the temperatures given in the testimony, unless the temperature is raised during churning process.

Q. That is a natural situation, isn't it?

A. It is apt to increase—a slight increase in the temperature during churning process.

Q. You have got a certain heat in the butter-fat?

A. Yes sir.

Q. Therefore takes some time to cool the cream?

A. Yes sir.

Q. That is done by a system of artificial cooling, isn't it?
A. Yes sir.

Q. Cool the cream to the temperature that you want it?
A. Yes sir.

Q. 48 to 54 is a common temperature for churning of cream in August and September?
A. It may be a little high in that season of the year.

Q. But the fellow that is doing it every day is in a position to know, isn't he? A. Yes sir.

Q. And you don't say that this temperature at which the butter that is involved here was churned was not cooled to a proper temperature, do you? A. I have stated——

—Q. Just answer the question.
A. You are asking the "proper". I don't know what you mean—"proper". In my judgment 50 to 60 minutes is the proper time.

Q. I am not talking about the length of the churning.
A. You are asking the proper time.

Q. I am asking about the temperature of the cream at the time of the churning. It appears in the testimony here the temperature was 48 to 54. Well those are proper tem-
240 peratures for churning at this season of the year?
A. They indicate being high. I have stated I preferred to churn in 50 to 60 minutes.

Q. I am not talking about the number of minutes it takes to churn. A. That is the only thing I can judge by.

Q. I am asking you about the temperature of the cream when it is put into the churn for the purpose of churning butter. You understand me? A. Yes sir.

Q. His Honor asked you some questions about that. You answered by saying 48 to 54. Did you so state—the temperature of the cream?
A. Yes, I did. But if I found that I was churning in twenty-five to thirty minutes, I would have to reduce my time, because it was not proper then—experience would show me it was not proper.

Q. If you were at the churn you could tell whether or not it was being churned all right, couldn't you?—that is a matter in the knowledge and in the judgment of the buttermaker?

A. We know if it takes from 50 to 60 minutes, we get an exhaustive churning. That is one of the primary things we are after to get, an exhaustive churning, to recover as much of the fat in this cream as possible, and we know it requires 50 to 60 minutes to do that.

Q. To get all the butter fat out of the cream——
—A. And a good, firm body.

Q. And a good, firm body? A. Yes sir.

Q. But that is something in the judgment of the buttermaker, at the time, isn't it? A. That is what he is there for.

Q. And it is after that that you make your test, isn't it?
A. Yes sir.

Q. And if your moisture content is over 16, you work it some more, to get it down under 16? A. Yes sir.

By the Court:
Q. This time of churning, you thought it was rather short?
A. Yes sir.

Q. Would it make any difference as to the rapidity
241 with which those paddles—I suppose they are paddles —revolve in the churn?

A. No they raise this cream to give it the agitation. They are not moving; the churn, while it is churning, they are stationary then, but move around with the churn, so as to agitate the cream.

Q. Is it possible to lengthen the time of churning by making the machinery go slower, and quicken the length of time by making the machinery go faster?
A. It would be, but they usually don't do that way. A motor is belted to the churn to run it, and fix the speed, and they have changes of speed that they can throw into low while they are working—have the churning speed and the working speed.

Q. The speed, then, of churning, is a standard speed?
A. It is. Yes, that is a fixed speed in each particular creamery. That is not varied from day to day.

Q. Is it uniform throughout the country, in different creameries? A. Quite so.

Q. So that the speed in this particular creamery, the churning would be the same as the speed in another creamery?

A. Yes, that would be quite the same. Some butter-makers have an idea that they want to churn a few revolutions faster, or slower, depending upon the condition. The thicker the cream the lower the churn must run, because it don't drop so quick, got to give it a little time, to churn down to 40 times. It is generally considered from 50 to 60 minutes is the happy medium for the time of churning, with a reasonable load.

(Witness excused).

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242 MARTIN MORTENSON, being first duly sworn, testified as follows on behalf of the defendant.

Examination in Chief.

By Mr. Jaques:

Q. Where do you live, Mr. Mortenson?

A. I live at Ames, Iowa.

Q. How long have you lived there? A. Since 1909.

Q. What is your business?

A. Professor of Dairying, at the Iowa State College.

Q. How many years? A. About twelve years.

Q. Can you tell us what your general education and training has been with reference to making, testing butter, etc.?

A. Well, I was brought up in Denmark. When I had completed my common school education I had a preparatory [court,] and entered their state seminary, where I completed a three-years course, after which I was teaching for one year. I came to the United States, 1893, and started to work in a creamery at Iowa Center, Iowa. I was, after a few months, engaged as butter-maker in a small creamery, and was working in a small creamery from three to four years as butter-maker, and entered Iowa State College, and graduated from a course in agriculture, a four-year course in agriculture, specializing in Dairying. I was for between four and five years in charge of the butter-making at Hanford-Hazlewood Cream Company, Sioux City, Iowa, and after that time, from four to five years, manager of the Hazelwood Company for the Hanford organization. After that time I returned to Ames and took my present position.

Q. What year would that be when you returned to Ames?

A. I really returned to Ames in 1908. I was appointed active head of the Department in 1909, when I was appointed in charge of the department.

Q. Were you afterwards sent to Denmark?

A. In 1900 I was appointed an honorary representative from the Department of Agriculture in Washington,
243 to go to England—or Great Britain, and Denmark, to study the butter market and Dairying in those countries. In 1914 I was sent to Europe by the Iowa State College, to study Dairying in England, Scotland, Ireland, Holland, Germany and Denmark.

Q. Some testimony has been called to our attention this morning about the grading of butter in Denmark, as to the water content of butter. Are you familiar with that subject?

A. Yes sir.

Q. Of the making of butter in Denmark?

A. I have studied butter-making in Denmark.

Q. Are you familiar with the tests of water content of butter in Denmark?

A. Yes sir. The butter—Well, they have some similar tests to what we have here, although the butter-makers over there are possibly not testing as much as we are here, but the testing of butter is mainly conducted by the State Experimental Station, Copenhagen. Every so often they will receive a telegram or a special delivery letter—the creameries receive it—with a request that they send them a sample of butter. That sample of butter is sent into Copenhagen to the experiment station, where it is judged for flavor, and also chemical analysis will be made. Furthermore, the police in that country have authority to go into a creamery at any time, and take samples from the butter, either in the churn or ready—I don't believe they can take it from the churn—but butter ready to be sold, and take samples at any time, and send those samples to Copenhagen for analysis. And after analyzing in Copenhagen a good many thousand samples of the Danish butter——

—Mr. Peterson: He is asking you about the moisture content in Danish butter.

The Witness: The moisture content for the last year was a fraction over 14 per cent. It will vary, different years. At present 13.9 per cent to about 14.1 per cent.

244 By Mr. Jaques:
Q. That is, it is manufactured in Denmark? A. Yes sir.

Q. Is that followed pretty universally throughout all countries?
A. Pretty universally. It will range from what I call normally, from 11 to say 15 per cent, then you will have a few above 15 and 16, and you will have a few below say 11, with a comparatively few samples.

Q. As you speak of the normal range between 11 and 15?
A. Just about, 11 and 15, possibly 15½, not to exceed that.

Q. The average water content runs along about 14?
A. 14, yes sir.

Q. Does the government of Denmark fix a maximum of water content? A. The maximum there is 16 per cent.

Q. Something was said this morning about a 20 per cent for domestic use.
A. That is permitted by the—with the understanding that it is labeled "Water Butter".

Q. If it runs over 16 per cent?
A. Then it is sold as water butter. —I think that is the name they use. I must say that I may be mistaken. I think that is the name. It is at least sold with the distinct understanding it contains over 16 per cent moisture.

Q. Are the packages branded?
A. The packages are so marked, yes.

Q. Do you know about the— You say you were over to England. Do you know about the English butter?
A. English butter; they have the same standard, 16 per cent.

Q. Did you ever follow their statistics, or their manufacturing, over there sufficiently to know what the average water content is?
A. In England we have no reports of the kind, at least I have never been able to secure a report, although I have been a member of the greatest Dairy Association for several years; but they have very few creameries in England. They depend upon getting their butter supply mainly from out of
245 the other countries, such as Ireland, Denmark, Holland, Australia, New Zealand.

Q. Are you familiar at all with the butter conditions in Germany? A. I am, to some extent.

Q. Do you know what the rule is there?

A. They have a double standard, if I remember correctly, of 16 and 80, 16 per cent water and 80 per cent fat; and for unsalted butter 18 per cent water, I believe that is correct.

Q. Do you know what the average water content is?

A. I do not. Few of the European countries publish statistics along that line, such as they do in Denmark, and it is very seldom that we get that. There is some, but I am not familiar with it.

Q. How about Ireland?

A. Ireland; they have 16 per cent standard. In Holland they have 16 per cent standard. In Australia and New Zealand they have a double standard of 16 per cent water and 80 per cent butter fat.

Q. Are you familiar with the water content, as shown by actual manufacture, in New Zealand? For instance, the statistics on the subject, as to what it shows as an average, or Australia?

A. I had those figures. I can't quote them exactly, but as near as I remember, it is between 13 and 14 per cent, the average.

Q. Australia?

A. Australia much the same. That is, as near as I can remember.

Q. Now, in order to be perfectly fair with everybody, you are familiar of course with the butter condition to a certain extent in France and in Belgium?

A. Somewhat higher standard than we have in the other countries. In Belgium they have a standard of 18 per cent moisture. In France they have a standard of 18 per cent, in Italy they have a standard of 18 per cent moisture content.

Q. Holland?

A. Holland they have a standard of 16 per cent. In Sweden they have a 16 per cent, and Finland 16 per cent. In Siberia they had 16 per cent formerly. Of course the condi-
246 tions there are very discouraging now. I don't know what they are doing.

Q. How is it in Canada?

A. Canada, have 16 per cent standard.

Q. The State of Iowa, has it fixed a standard?
A. We have a standard of 16 per cent moisture and 80 per cent butter fat.

Mr. Peterson: That is your law?

The Witness: Yes sir, that is Iowa State law.

By Mr. Jaques:
Q. You are familiar also with the statistics in this country, in the United States? A. I am, yes.

Q. Can you tell us—could you give us the average water content of butter, say, in 1900?
A. The reports available—the report I have, the only report I have, is the report of the United States Department of Agriculture, known as Circular No. 39, It was written in February 1903. They made analysis of 739 samples. The average composition was 11.68 of a per cent of moisture. These analysis were made during the four months May, June, August, September. If you care to have the analysis for each month.

Mr. Peterson: Haven't you something later than 1903?

The Witness: I have something later, yes sir.

Mr. Jaques: We will go on.

The Witness: In May, 1902, they analyzed 122 samples; the average moisture content was 11.80 per cent. In June 1902, 119 samples, 11.91; In August, 377 samples averaged 11.79. In September, 112 samples average 11.59. Shall I give some of the others?

Q. Yes sir, later ones.
[A.] Pennsylvania State College published a bulletin, No. 93, over some analysis of butter that was entered in a scoring contest conducted during the years 1908 and 1909. I am not able to find just how many samples they had, but the average of all samples for the year was 12.503 per cent. We have a report on the composition of Market Butter, published by the University of Illinois, known as Bulletin No. 139. The
247 authors of the bulletin are Carl E. Lee and Jesse M. Barnhard. They say that the average composition of 574 samples of market butter for a period of one year, beginning March 1907, was, Water 13.54 per cent; Fat 83.2 per cent; [Sale] 2.25 per cent, and [casine] .9 per cent. We have a bulletin published by the University of Wisconsin,

known as Bulletin No. 182, published in November 1903, giving analysis of a number of samples that were sent in to be scored in the education contests, but that is given by months, from May to April, May 1907 to April 1908, and gives the average for each month and the number of entries for each month.

Mr. Peterson: What year?

The Witness: May 1907.—I can give the average for each month. I have not the average of all. May, 92 samples, moisture content 13.1; June 126 samples, 13.1; July 115 samples, 14.4; August 130 samples, 13.7; September 172 samples, 13.6; October 118 samples, 13.4; November 106, 13.4; December 104 samples, 13 per cent; January 114, 13 per cent; February 139, 13.3; March, 86, 13.2; and April 107, 13.7.

Q. Is this bulletin 162 you just read?
A. That is Bulletin 182, from the University of Wisconsin, dated October 1909.

Q. And you have nothing later than that?
A. We have nothing later, I don't think of any bulletins—when I came—I didn't have much time to find except just a few bulletins I had. Most of the information we had recently is along the line of analysis which we have made in connection with education contests. We have a good deal of material also collected at our station, and I have not the time to compile it, or figure out the average.

Q. You heard the testimony of Mr. Storvig, with reference to the manufacturing of butter, and so forth? A. Yes sir.

Q. Do you agree with his statements in regard to that?
248 (Withdrawn). You are a practical butter-maker, have manufactured butter? A. Yes sir.

Q. Can you tell me whether a butter-maker is able to control moisture content of the butter which he manufactures?
A. Within certain limits.

Q. What limits?
A. He can control the moisture content of the butter within, I will say, from half a per cent to 1 per cent.

Q. Was it true that they reached a point when they could control moisture when you first commenced to make butter?
A. No, when I began to make butter we had no time at that time by which to operate.

Mr. Peterson: That is the trouble here; too many regulations.

By Mr. Jaques:

Q. Did you keep any statistics or compare your own work as to water content in those days when they manufactured without regard to regulation?

A. Not in the early days when I started to work in a creamery, except at the close of the month we figured the amount of over-run, as we call it, that we had for the month, and in that way kept a record of that.

Q. By over-run, you mean the——

A. Amount of butter taken in excess of the amount of fat which we used for the manufacture thereof.

Q. You have no record?

A. But at that time we figured 16 [per] overrun was a very satisfactory over-run.

Q. How about the present time?

A. We figured that the butter-maker today should obtain from 22 to 23 per cent over-run, if he operates together a cream plant or separator plant; if he is operating a whole milk plant, will obtain 20 to 21 per cent over-run.

Q. How did you account for that over-run?

A. It is natural, after we had some standard, we begin to standardize our method, and it is an economic problem to the creamery man, that they will make a piece of but-
249 ter that will contain pretty well up to the 15 per cent moisture, in order to exist. I usually figure that we should come within the limit of from 14½ to 15½, that is the instruction we give our students.

Q. And that 15½, or the higher water content, is caused by the process of manufacture, is it, or is it not?

A. 15—we say any water content we have is due to the process of manufacture. Of course it is not possible for us to eliminate the water, but if we go to the various creameries we will find that one creamery operator, more so in the past than today, used to manufacture butter containing 10 per cent; he had his process, and stuck to that because he didn't know any better. Another one manufactured a butter containing 11 per cent, and so on. We have today, as we say, standardized our system of making butter, so that the producers always know what they are getting, and unless we

have a reasonable standard moisture content, we can not hold our 18 erroneous, because other patrons can pay them more for the products than we can, and the consumer is treated so that he knows what he receives when he gets butter containing less than 16 per cent moisture.

Q. But we don't in this country, brand the butter?
A. Not if it contains below 16 per cent.

Q. We don't try to tax it, if it is over that.

Mr. Peterson: You have not succeeded yet.

By Mr. Jaques:
Q. You heard all the testimony in this case about the method of manufacturing this butter? A. Yes sir.

—Q. In question. Can you point out anything in the method pursued, or the process, that would in your judgment add to the water content or might add to the water content?

Mr. Peterson: Objected to on the ground no proper foundation has been laid for the question, and it appearing
250 on the [fact] of the record that moisture is expelled, so that it is within—under 16 per cent at the time of manufacture, if the butter in question is made in the usual way.

The Court: He may answer that. He has heard the testimony.

Mr. Peterson: Exception.—Taking out one feature of it.

The Court: The question called for his opinion; his criticism, if it was a criticism, of the process that has been described.

Mr. Peterson: Upon a particular step. That is relieved again by expelling the water.—Exception.

The Witness: I would suggest, in that case, in order that the butter might have contained less moisture, to reduce the temperature, so that it would have taken from forty-five minutes to an hour, to complete churning. That is the time that we recommend, and it is our experience that we are then obtaining a better body. And the second suggestion I would make would be that they had less cream in the churn, because it is really a churn of a capacity of about 900 lbs., or, as they say, from 900 to 1000 lbs., in which they churn,—

churn over 1000 lbs. of butter in that churn, and by having a big churning, especially if the butter came so soon as that—that you are apt to obtain a high per cent of water.

By Mr. Jaques:

Q. Is there any connection between the temperature of the cream as it goes into the churn, and the length of time necessary to make butter?

A. There is. The warmer the cream the sooner the cream will churn.

Q. And the more water will be absorbed?

A. The more water will retain.

Q. And that is because of the condition—is that be-
251 cause of the condition of the butter-fat—churn at a high temperature quickly?

A. Yes, it is a fact that the butter granules, when they are soft will hold on to the water, the more so than when they are hard.

Q. The more solid the granules, the less apt to absorb?

Mr. Peterson: Not absorb.

The Witness: Yes, that much more readily.

By Mr. Jaques:

Q. We use the word "contain". I will ask you, Professor, if it is not a fact that the water is contained because it has commingled with the softer butter fat, been absorbed by it, isn't that what [cause] it to be contained—retained?

A. It is not a fact. It is really a mixture you have in the churn at first—you have the butter and the butter milk all mixed up; when you remove the butter milk we find that there is more of it held between the butter granules, if the granules are soft, and the same is true after washing, that there will be a little more of the water retained, and you will not expect to expel it so well during the working process as you will if the butter was firmer.

Q. And soft butter—the water commingling is absorbed, or is retained? A. Retained.

Cross Examination of Martin Mortenson,

By Mr. Peterson:

Q. Professor, you are connected with the Ames institution now? A. Yes sir.

Q. And have you been with our government, the Dairy Department of the Department of Agriculture?

A. State of Minnesota? No sir.

Q. The government? A. I have not, except——

—Q. only in an expeditionary sense? A. Yes sir.

252 Q. You made some standard of butter fat and moisture standard. A. Yes sir.

Q. I notice in the Proceedings of the Official Dairy Instructors, 1910 and 1912, you had a paper about "Moisture Control", and the like? A. Yes sir.

Q. When you were in Iowa, you made some special investigations along the question of moisture control, and Butter Fat and Moisture standard, didn't you? A. Yes sir.

Q. And you have been a teacher down in Iowa?

A. Yes sir.

Q. Now, when you heard the testimony in this case; in this case it appears we manufactured the butter and we made a test, and if over 16 per cent, expelled some more moisture, and it was in the operation of getting the butter fat and butter and expelling the moisture down to below 16 per cent, that appears to have been the operation, doesn't it?

A. Yes sir.

Q. Now, do I understand that as an instructor in the State of Iowa, your practice has been, where your moisture content showed fourteen per cent, to incorporate water, is that your teaching down there?

A. That is the general teaching throughout the United States and other countries as well.

Q. [Its.] That is all right, as you understand the business?

A. We figure that is all right to standardize our products, just as so we don't go above the limit.

Q. In other words, you have heard all the testimony in this case, including the questions of counsel for the government here? A. Yes sir.

Q. And economic conditions, so far as you have studied

them, and the teachings of dairy schools, including your own, are that there should be standard butter fat standard of 80 per cent, and a moisture standard of 16 per cent?
A. Yes sir.

Q. And that, as far as the 80 per cent butter fat is concerned, there ought to be that much butter fat, and as far as the moisture is concerned, anything up to 16 per cent
253 is all right, that is your teaching, and that is the economic situation? A. That is true.

Q. That is, in the nature of things? A. Yes sir.

Q. [Your] teach that and you say it is all right? A. I do.

Q. And it is all right, even if you have to incorporate water? A. It is, if the moisture content is too low.

Q. And in doing that, and in making butter, with the proper finish, as you have said, they do it—can only gather the cream and churn it and wash it and work it, and make a moisture content test, and if it is under 16 per cent, according to their test, leave it alone?
A. We know practically what we get——

—Q. Can't you answer that "Yes" or "No"?
A. I can't answer that and be honest, without being misunderstood.

Q. I didn't mean to ask an unfair question. I will ask you this: You instruct in butter-making, and have been instructing in butter-making? A. Yes sir.

Q. And I notice in the report of Professor McKay here, which I showed to Mr. Storvig, that in making a study of what dairy professors recommend as to standard, he included "Professor Mortenson". That is your self?
A. Yes sir.

Q. Communicated to you, and you reported to him?
A. Yes sir.

Q. And you got a butter fat of 80 per cent and moisture 16? A. Yes sir.

Q. And so you instruct that it is all right to work up your moisture content to under 16 per cent? A. Yes sir.

Q. And in doing that all that the butter makers in the world can do is to make his test, is it not, of the moisture content?

A. I understand—he is making the test, but he knows, as a rule, within half a per cent, of how much the butter tests, before he makes his test.

Q. Then I will come back to that. If you are making butter every day you know the nature—you know your own trade, don't you? A. Yes sir.

254 Q. You know where your cream comes from?
A. Yes sir.

Q. And you know what it contains? A. Yes sir.

Q. And you know when it comes into the creamery you make your butter-fat test? A. Yes sir.

Q. Babcock test? A. Yes sir.

Q. That is standard all over the country? A. Yes sir.

Q. You know your general churning conditions?
A. Yes sir.

Q. And the day's experience [tell] you of your probability as to tomorrow? A. Yes sir.

Q. Then you mean by that that when you are churning today, and when you get through, and before you make your moisture content test, you can make a pretty fair guess what it is going to be? A. Yes sir.

Q. That is fair enough? A. Yes sir.

Q. But you do make your moisture content test, don't you?
A. Yes sir.

Q. And you don't make any butter fat test, do you—that is a matter of——
A. We do in the Iowa State College, but as a rule not.

Q. But when we are talking about the standard, and adopting the standard, and adopting a moisture standard, we have difficulty in having a butter fat standard that is practically in every creamery, don't we? A. Yes sir.

Q. That is fair, isn't it? A. Yes sir.

Q. But, notwithstanding the fairly accurate guess of the [butter-make] and superintendent in the particular creamery, based upon his experience from day to day, nevertheless the moisture content test is proper, and is made, isn't it?
A. It is essential.

Q. It is essential, because, for one thing, this moisture control is not absolute in the butter-maker? A. Not absolutely.

Q. So when we are talking about degrees and the control not being absolute, good butter-making requires a moisture content test? A. Yes sir.

255 Q. And this scientific chemical test is not practical, and is not in common use in creameries through the United States, is it?

A. It is not practical for the small creameries.

Q. That is what I mean?

A. But for a large creamery it is.

Q. In the case of every churning?

A. I think so, in a large plant.

Q. The other is in common vogue, isn't it, what we call the weighing test?

A. Yes sir. In a large plant I will use them both; first use the one for immediate use——

Q. And from time to time a test by the chemical one?

A. Test them all by the chemical one afterward.

Q. You check on it from time to time? A. Yes sir.

Q. I mean in the process of butter-making, all the butter-maker can do is to make a moisture test, and see what it is?

A. Yes sir.

Q. According to the method that is in vogue in this particular creamery? A. Yes sir.

Q. That is all there is to that, isn't it? A. Yes sir.

Q. And if it is under 16 per cent, it is all right to leave it alone? A. If it is——

—Q. Answer the question "Yes" or "No". If it is under 16 per cent, is it all right to leave it alone?

A. I can't answer that yes or no.

Q. Still [you] regulation is 16 per cent?

A. Within half a per cent margin. There is a little difference in our work of taking the sample in our method of doing the work. Another thing, there may be a slight variation in the moisture content from one end of the churn to another; we figure half a per cent is a fair margin.

Q. But all that the butter-maker can do is to make his moisture content test, isn't it? A. Yes sir.

Q. And endeavor to hold it under 16 per cent?
A. Yes sir.

256 Q. And if it runs over 16 per cent, he can work it more?

A. After the butter has been chilled he can work it more.

Q. And that means leaving your churn lid open just a little bit and starting your machinery in motion and your workers in gear? A. Yes sir.

Q. Means working it a little more?
A. And draining it every two or three hours.

Q. So it will drain out? A. Yes sir.

Q. So even if you churn pretty rapidly, and your butter was a little soft, instead of a little hard, as you say, two or three extra revolutions of the churn, with the operation of the workers, could relieve against the former situation, as far as expelling and pressing out any moisture retained by virtue of what you say was quite rapid churning?
A. It usually can, after it has been chilled for a while.

Q. And that can be done by the judgment of the butter-maker? A. Yes sir.

Q. So a rapid churning of 35 or 30 minutes of a thousand pounds of cream might cause the butter fat to retain a little more constituent moisture than the churning at a cooler temperature, but that could be relieved against after your test anyway, by working it a little more? A. Yes sir.

Q. This butter that is involved here, assuming the test to be as given both by the government and by ourselves, and assuming it is unsalted, and assuming that your [casine] is about 1 per cent, then this butter would have something over 82 per cent of butter fat? A. Yes sir.

Q. And that contains more food value than the standard of food value established by the Iowa law, doesn't it,—contains more butter fat than the standard, according to the Iowa law?
A. It does, because we have no reference in the law to unsalted butter.

Q. It contains more food product than the food prod-
257 uct in this salted butter in Iowa, on the basis of 80 per cent? A. Yes sir.

Q. Now, on the question of standard, you say made in-

quiries of many creamery butter-makers in the State of Iowa, when you prepared this paper, didn't you, Professor?
A. Yes sir.

Q. And you also made inquiries and asked for report on moisture control, didn't you? A. Yes sir.

Q. And I will ask you if in your report this sentence appears: "29 report that during certain months there appeared difficulty in holding the moisture control below 16 per cent; while 31 creameries did not experience such difficulty"? A. Yes sir.

Q. When you say that, Professor, you mean that in a general way, and constitutionally, and normally, so far as the particular butter referred to by those butter-makers, there was when you got through that moisture of over 16 per cent?
A. During the latter part of May and during June and July, at times they have experienced that. We have less, however, of those difficulties now than we had a few years ago.

Q. But you say those things may happen?
A. We have difficulties yet, yes.

Q. And you have difficulty in holding your moisture content below 16 per cent, or you may have?
A. Some of the butter-makers have, yes sir.

Q. Well, and when they do have difficulty, that moisture content exceeding 16 per cent, is constitutionally in the milk and in the cream and in the butter, without being incorporated, isn't it?
A. Well, it is in the milk and cream, but that has nothing to do with the excessive amount of moisture that the butter will hold.

Q. I know you can take butter, Professor, and you can incorporate moisture in it, by mixing it, and if it is your purpose to do that, you can incorporate a good deal more moisture than 16 per cent, can't you? A. Yes sir.

Q. And you can incorporate what per cent?
A. If we want to?

Q. Yes, if you want to.
A. You can incorporate 20 per cent possibly.

258 Q. And 25 per cent, can't you? A. Yes sir.

Q. Well now, that is what you mean in that statement there, in your report, is it, Professor? A. No sir.

Q. That is not difficult of control, is it? A. No sir.

Q. But in those cases to which you refer in your article, Professor, you mean that those butter-makers gathering their cream and cooling their cream and churning their cream and washing their butter and working their butter, and making their moisture test, in the usual and customary way, still had a moisture content of—exceeding 16 per cent, don't you?
A. Yes,—in the usual way, yes sir.

Q. That is what they meant, and that is what you mean to infer? A. Yes sir.

Q. And so I am asking you, that that situation may nevertheless appear, and that is what is referred to in your report, and doesn't cover the case of using any abnormal methods to incorporate moisture, that is true, isn't it?
A. Yes sir, that is true.

Q. So there is—or there may be,—and your investigation and your report shows that, to that extent, there is an embarrassment, or difficulty of moisture control, that, notwithstanding normal methods, you may have a moisture content exceeding 16 per cent, that is true, isn't it?
A. Some butter-makers do experience it, but they can overcome it.

Q. I understand. But you are finding, and your investigations show the difficulty of moisture content, as you have reported in that paper? A. Yes sir.

Q. And that is found without any—that is found by those butter-makers in the manufacture of butter, without using any process or material, with intent or effect to cause the absorption of water, milk or cream in the butter? A. Yes sir.

Q. Then, insofar as that moisture content in those cases—
would be a natural and normal water content for that
259 particular butter, wouldn't it?
A. "Normal"—I don't quite fully [understant,] but——

Q. I will withdraw that. [I] is found there without incorporating it? A. Yes sir, it has not been [incorporating].

Q. Either in the feed in the grasses or in the cattle or in the nature of things, that water was there naturally?

A. It is on account of the feed usually.

Q. On account of the feed? A. Yes sir.

Q. And when it was on account of the feed, and was naturally there, that wouldn't be an adulteration of butter by the butter-maker? A. Not by the butter-maker.

Q. And so, naturally, Professor, there is such a thing as obtaining a moisture content exceeding 16 per cent?
A. Without the butter-maker making an effort to obtain 16 per cent?

Q. Yes sir. A. Yes sir.

Q. What would he do, if his moisture content, as these butter-makers in your state down there, in almost half of those instances, what would he do—to reduce that moisture content to 16 per cent or under?
A. In a case of that kind, when we are not notified by similar experience, we have two extension workers, and we send them out to those plants and show them how to operate it so that they will be able to reduce it, and we never fail to have that reduced. It is just by adopting a little different method of manufacture.

Q. And it is a process of elimination of more moisture, isn't it?
A. It is not entirely. If I may explain how we go about that. Either it is usually due to high temperatures and overly-rich cream and too full a churn. But, even by improving those conditions, we have found that the attempt might be difficult unless that we increase the size of the butter granules. So, instead of having a small granule, about 1/8th of an inch in diameter, we possibly increase that granule to 3/8ths, or 4/8ths, of an inch, in diameter, because we figure that there is less moisture originally held
260 in the granule than we have in the butter. A moisture is held in the butter in two different ways: You have a certain amount of moisture that will have been incorporated into the granule. Then you have a certain amount of moisture that will be held between the granules and work into the butter. If you have small granules, you have small moisture pockets. These are not so readily disposed of. If you have large granules, you have larger moisture pockets, and you can readily expel that moisture, and it has been [out] experience that as soon as the butter-makers become familiar with that they have no further difficulty.

Q. That is correct. And a creamery, making a couple of million pounds of butter a year, would be in a position to know how to do that nicely? A. They should be, yes sir.

Q. Professor, you made some reference to the fact that it appeared that the 17 tubs churning was done pretty rapidly. Now I hand you Defendant's Exhibit No. 1, and ask you to examine that. That is a tabulation of all churnings that are involved here, 260 of them, a total of 350 tubs. Looking at it it appears the very first churning was 17 tubs? A. Yes sir.

Q. And 17 tubs would be 17 times 60 lbs., assuming 60 lbs. to the tub, something over 1,000 lbs. of butter, wouldn't it? A. Yes sir.

Q. Assuming the 26 churnings is correct, we get the average of all those by dividing 350 by 26, or 13½, assuming the computation is correct? A. Yes sir.

Q. So the average churning would be 13½ tubs of butter? A. Yes sir.

Q. So it is not the case of 17 tubs being churned each of the 26 churnings, is it? A. No sir.

Q. And you could churn an average of 13½ tubs sooner than you could churn 17 tubs? A. Yes sir.

261 Q. So when we consider the—all of the churnings consecutively, the 17 tub churning, are from time to time of 25 to 35 minutes, which was the testimony here tends to be explained and relieved against?

A. So far as this report is concerned, Exhibit 1.

Q. If you will notice, in the case of the 17 tubs, the moisture test was 16 per cent? A. Yes sir.

Q. That tends to corroborate your idea of the natural tendency not to absorb, but to retain, moisture on the part of the butter granules, does it not? A. Yes sir.

Q. That is the second test, Professor? A. Yes sir.

Q. And the first test, showing this 16 per cent, that tends to corroborate your point, doesn't it? A. Yes sir.

Q. And there that is relieved against by working the butter a little more? A. Yes sir.

Q. And that corroborates too that the working of it should tend to expel a little more moisture? A. Yes sir.

Q. The other one, where the moisture content, second test,

is 16 per cent, was a case of 15 tubs of butter, and that relatively high moisture content would tend to be there for the same reasons? A. Yes, sir.—Rather full churning.

Q. It is rather a full churning. And that is the second test, and the excess moisture was expelled.

A. Working it a little more, that is the usual and customary way, yes sir.

Q. Now, Professor, I will hand you this report, which is part of the publication—of the Official Dairy Instructors' Association, 1912, and ask you if that contains a summary of the recommendations of the butter makers of Iowa, on the question of butter standard?

A. This is a report I prepared for the American Dairy Association, known as the Official Dairy Instructors' Association.

Q. What was your report there covering the butter fat standard and moisture standard, the total reported to you, and what they reported?

A. We received replies from 67 butter makers in
262 Iowa, or creameries in Iowa. Of these two preferred 14 per cent moisture standard. We just inquired in reference to what kind of a standard that it was considered to be most fair. 29 preferred a 16 per cent moisture standard, 4 preferred a 17 per cent standard, moisture; and 3 [and] 18 per cent moisture standard. One preferred a 14-to-15 per cent moisture standard, and one a 16-to-18 per cent moisture standard, one a 24 per cent moisture standard, and one a 76 fat standard, 3 78 per cent fat standard; 20 80 per cent fat standard; 1 80½ per cent fat standard; 3 81 per cent fat standard; 2 81½ per cent fat standard; 1 82½ per cent fat standard; and 3 82 per cent fat standard, and one an 83-per cent fat standard, and one an 82 per cent fat standard.

Q. The fat content of the butter that is involved here, on the basis of the analysis of the government, shows 82.24. That is higher than all of those butter fat recommendations, except one or two or three or four of them? A. Yes sir.

Q. How many recommend there a butter fat standard exceeding 82.24? A. 2 creameries, one 83 and one 82-to-85.

Q. Out of a total of how many? A. 67.

Mr. Jaques: Those are from the——

The Witness: Creamery men.

Mr. Jaques: Themselves?

The Witness: Yes sir.

Mr. Jaques: Didn't apply to anybody that was consuming butter to inquire what they wanted?

The Witness: No sir.

By Mr. Peterson:

Q. I show you Exhibit G (which counsel does), which is a standard bulletin No. 12, issued February 20, 1918.

Do you know Professor McKay? A. Yes sir.

Q. He has written on the question of butter? A. Yes sir.

Q. He is an authority, isn't he? A. Yes, sir.

263 Q. Now, I will ask you to look at pages 23 and 24——

—Mr. Jaques: Mr. Sorensen spoke to me. He has occasion to be at Princeton tomorrow. Probably we could shift the situation so that he could go on the stand.

(Witness excused for the present, and)

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JAMES SORENSEN, being first duly sworn to tell the truth, the whole truth and nothing but the truth, testified as follows.

Examination in Chief.

By Mr. Jaques:

Q. You live here in St. Paul? A. Yes sir.

Q. How long have you lived here? A. Not quite four years.

Q. Where did you live before you came to St. Paul?
A. I lived in Albert Lea about six years.

Q. Have you always lived in the State of Minnesota?
A. Not always.

Q. Have you any training in the butter business, manufacturing? A. I have.

Q. Will you tell us what training?
A. I started to learn the butter-making business in Denmark, in 1888. I worked there about two years, and came to the United States, in 1890, in the spring. During the fol-

lowing five or six years I worked in creameries in the State of Indiana, Thorntown, Hillsboro, Indiana, and Dysart, Iowa, at West Bend, Iowa, Cusson, Wisconsin, Milbank, South Dakota. From there I went to the Fenscaup (?) Creamery, near Maple Plain, in Hennepin County, Minnesota. Also, I forgot,—I worked a short time for Bridge-
264 man and Russell, at Duluth, three or four months, during the summer, I believe, of 1898. I left the Fenscaup Creamery in 1907 to go with the State Dairy & Food Department, as inspector. I acted as inspector a little over four years, and was assigned to the Albert Lea State Creamery, as manager. That was under the supervision of the Dairy and Food Division. I was manager of the State Creamery for six years, and in 1917, August 5, I was appointed State Dairy and Food Commissioner of Minnesota.

Q. How long were you State Dairy and Food Commissioner?

A. I held that position until April 1st, 1920, when I resigned. Since that time I have been state secretary of an organization of creamery managers and proprietors, in this state, with an office in St. Paul.

Q. Are you familiar with the statistics of literature of the matter of moisture in butter?

A. Yes, to some extent I am. I have tried to follow it as closely as I could since I come to this country.

Q. You were working in creameries making butter in 1902, when this law taxing butter as adulterated over 16 per cent water was passed, were you? A. Yes sir.

Mr. Peterson: Objected to as an improper question, and assumes a rule contrary to law.

Mr. Jaques: I am talking about the law.

Mr. Peterson: The regulation has been held void.

Mr. Jaques: The law hadn't been held void.

Mr. Peterson: You read into the question that over 16 per cent was adulterated butter.

The Court: He may answer.

Mr. Peterson: Exception.

The Witness: Yes.

By Mr. Jaques:

Q. Now the law was passed in 1902. Are you familiar with the statistics, bulletins, etc., that give the [butter]
265 content of butter 1902, and prior years?

A. I have read Bulletin 39, and several other publications, that I couldn't possibly remember the number or the name of them at this time; various experiment stations as well as——

Q. I believe that Bulletin No. 29 was got out in 1903? A. 39, I believe it is called.

Q. That is the Alvord? A. Yes sir.

Q. That was in 1903? A. I am not positive as to the year.

Q. What was the average water [vontent] of butter, as shown by—from those samples?

Mr. Peterson: Objected to, already in the record, covered by the testimony of Professor Mortenson, reading from the very bulletin itself.

The Court: He may state.

The Witness: As I remember it was close to 12 per cent. I don't remember the fractions.

Q. 11 and a fraction. Have you kept track——
—A. I guess so.

Q. Was there any change in the process of manufacturing butter occurring after 1902, process, manipulations, in the manufacturing?

A. I think there was a general change, due to this moisture ruling, largely competition forced a change.

Q. Was that change in the direction of reducing the moisture content? A. Increasing it.

Q. Can you tell us—go on and tell us what the change in the process of manufacturing butter—manipulations for the manufacture of butter were to increase the water content?

A. Yes, it is a very short story. It might be said in one sentence: increased temperatures is the greatest factor to be taken into account when we speak of increased moisture—increase your temperatures of wash water, possibly work it a little more; possibly in some cases work it in the wash water, which a great many butter-makers have experimented with, resulted in higher moisture.

266 Q. Does that element of temperature enter into the process of causing the butter fat to absorb or retain moisture? A. Yes sir.

Q. Effective as to the wash water as well as the cream as it goes in the churn? A. Yes sir, all along the line.

Q. Can you tell the reason why that increases the absorption or retention of water?

A. Yes, it is very easily understood. You will have your cream warm, too warm, what I would call too warm, speaking from the standpoint of a man who is trying to make butter of good body, not having in mind moisture content at all. You have a temperature too high, churn too quick, the butter becomes soft, and the water can't get away, simply retained, and it then becomes a case, as has been said here, of working it out, in order to get below 16 per cent.

Q. It becomes—well, it becomes—Does it break down the grain of the butter, that high temperature?

A. Yes, it does to some extent.

Q. The softer it is the more tendency there is to the grain to give away—not to have firm granules of butter?

A. Yes sir.

Mr. Peterson: Therefore they wouldn't do it.

Mr. Jaques: Oh, no! It seems they have.

By Mr. Jaques:

Q. Then the water is absorbed, is it, you might say, or becomes a constituent part of the butter fat itself, so that it don't drain off?

A. It becomes mixed with the oil, you might call it. I have seen butter that was taken out of the churn looked more like oil than butter.

Q. Have you ever—Is there any process that can be used whereby you work the water into the butter?

A. I have never tried it myself, but I understand a number of butter-makers incorporate moisture in that way, how successful they were I can't say.

267 Q. Would that be moisture that was originally a constituent part of the cream and wash water as well?

A. Well water would be added to the mass of the churn, and the doors closed tight and worked into the but-

ter, or worked in the wash water before the wash water is drained off—a certain number of revolutions.

Q. How about the churns, be alterations in the make of churns?

A. There is difference in the make of churns, speaking from a standpoint of incorporating moisture. Some churns have the rollers up high in the churn, water draining away from it while the thing is worked, while other churns worked with water close to the bottom, making it much easier to incorporate the water that is in the churn.

Q. Working it right in the water, the water at the bottom, you say? A. Yes sir.

Q. Do you know when those churns became popular and in vogue in the creameries, in the lower rollers?

A. I can't remember the exact year, been in use twenty years, I would say possibly longer; I am not sure.

Q. You made butter while in Denmark, as I understand it?

A. Two years, as an apprentice.

Q. Have you kept up at all with the water content of Danish butter since?

A. I have not made much of a study, but occasionally I see bulletins from Denmark that come to our office.

Q. Do you know [that] the average water content those bulletins show?

A. Not very far from 14 per cent, as I recollect. I couldn't remember any exact fractions.

Q. You heard the testimony in this case in regard to this churning? A. Yes sir.

Q. In regard to the process of churning? A. Yes sir.

Q. And the length of time that the butter was churned, twenty-five minutes to thirty minutes? A. Yes sir.

Q. Twenty-five to thirty minutes?

A. That is the way I understood it.

268 Q. You understood it twenty-five to thirty minutes. You can testify on that basis. Can you tell us as a practical manufacturing butter-maker what the temperature of that cream would have to be, in order to complete the churning in twenty-five to thirty minutes? A. No, I can not.

Q. You can't tell that?

A. It depends on the richness of the cream, it depends upon the locality where the cream came, on the kind of cattle, and so forth. The temperature, in Minnesota, at least, varies 6 to 8 degrees, the same day.

Q. What in your opinion is the proper length of time for churning?

A. I consider from 45 minutes to one hour—I always have.

Q. Can you tell me this; will cream—would it be possible to churn cream quicker at a high temperature or at a low?

A. Churn quickly at a high temperature. The higher the temperature the quicker it churns. The lower the temperature the slower.

Q. Can you tell me what difference there would be as to the water content in butter between the height of churning at high temperature and low temperature, what would be the effect, if any?

A. The effect would be that the high temperature would naturally contain more moisture, retain more moisture, while with the lower temperature, and harder granules, water would drain off, and would result in a lower moisture content in the finished product.

Q. Would it or would it not be as easy to churn butter from cream, so as to produce water content, standard water content of 14 per cent moisture, as to produce it at 16 per cent moisture?

A. It would require a little longer churning time, possibly twenty or twenty-five minutes longer. That would be about the only difference I know of.

Q. The lower the temperature of the cream the slower the churning would have to be?

A. Yes sir. Might get it so cold could churn for three
269 or four hours.

Q. Now, Mr. Sorensen, when you were State Dairy and Food Commissioner, what was the law of Minnesota as to Water content?

Mr. Peterson: Objected to as immaterial.

By Mr. Jaques:

Q. The law of Minnesota provided for 16 per cent water content, made it unlawful to have more?

Mr. Peterson: The same objection.

By Mr. Jaques:

Q. Is that right? A. Yes, correct.

Q. Did you find, after being in there, that the creameries were making it at a higher water content than that?

A. Yes sir, some of them.

Q. Did you take any steps to correct that?

A. I certainly did.

Q. By prosecutions? A. Yes sir.

Mr. Peterson: I move to strike out the last question and answer, as having no bearing on the issues in the case.

The Court: It may stand.

Mr. Peterson: Exception.

Cross Examination of James Sorensen,

By Mr. Peterson:

Q. Well, Mr. Sorensen, temperature is one of the elements entering into the time that it takes to churn the cream, isn't it? A. Yes sir.

Q. But it is only one of the elements, isn't it? A. Yes sir.

Q. It is the only one? A. No.

Q. The content of the cream and the amount of the
270 butter fat and other elements enter into the kind of—the kind of churn and other elements enter into the time it takes to churn the cream, that is true?

A. That is true.

Q. So temperature alone is not controlling as to the time it takes to churn your butter? A. Not entirely.

Q. And the time that it takes to churn your cream is a matter within the good judgment of the butter-maker, working from day to day and handling the cream, that comes to his particular creamery, isn't it?

A. If he has good judgment, yes sir,—some of them haven't.

Q. You have. Of course you were not present when the butter was made that is involved in this case? A. No sir.

Q. But you have made some investigations as to butter fat and moisture content?

A. To some extent. Not very extensive.

Q. And of course the effort of the butter-maker should be to hold the moisture content down to under 16 per cent, shouldn't it? A. I think so, to avoid trouble.

Q. Well, you referred to Professor McKay's report here on Standards, and in getting together his data and statistics on standards he communicated with you, and you reported, did you not, in effect as follows: "Hon. James Sorensen, State Dairy and Food Commissioner of Minnesota, 80 per cent fat, 16 per cent moisture, considered to be fair for manufacturer and consumer"? A. That is standard, yes.

Q. That is correct? A. That is correct.

Q. Now, James, it wouldn't be practical, would it, in the manufacture of butter, to so make it and so work it as to reduce the moisture content, to 12 per cent?

A. No, I wouldn't say that it would be, no.

Q. I show you plaintiff's Exhibit H, which is a compilation dated September 1918, collated by O. F. Hunsicker, F. W. Buska, T. A. Borman, and G. L. McKay, including
271 James Sorensen, on the joint committee, on Definitions and Standards, and ask you to glance at the bottom of page 89, and then look at the statistics that are tabulated on pages 90, 91, where a reference is made to certain data collected by you when you were State Dairy Commissioner, making this reference to you merely so that you may identify what is there, and then answer me whether it is correct or not?

A. I might say that Professor McKay, he did not get these——

—Q. I don't care about the speech he makes, that is merely introductory to his publishing your reports?

A. He didn't get this from the Dairy and Food Department of Minnesota.

Q. Just glance at it and the concluding findings,—whether it appears to be accurate and appears to be your report?

A. I can't remember, but I wouldn't be surprised but that this is correct.

Mr. Jaques: Have you got the original report?

The Witness: I expect it can be had from the Commissioner's office.

By Mr. Peterson:

Q. It is up there? A. I am sure it is.

Q. And we can get it by inquiry of the Commissioner?

A. I think it is correct. Of course that was contest butter.

Q. Contest butter? A. Yes sir.

Q. You mean prize butter, butter in contest——

A. Not necessarily prize butter. Much of that is experimental butter, so far as the creamery is concerned it is not altogether made in the normal way. Some of the butter-makers have a little churn where they make a little batch, with the idea of getting a good butter.

Q. This is educational contest butter?

A. Yes sir. You must realize many butter-makers in this state, and other states, have not even a moisture test today——

Q. Many of the cooperative creameries in Minnesota don't even take the moisture?

A. Yes sir. I can take you to creameries today that
272 have not got a moisture test, and never had one.

Q. They make butter without taking the moisture test? A. Yes sir.

Q. That wouldn't be quite the regular thing, would it,—there ought to be a moisture test?

A. It is getting—many of the creameries are beginning to realize they must test for moisture.

Q. Those were your instructions as Commissioner?

A. We have no way to force them. Taking that moisture test is a proper thing in the manufacture of butter. We have been teaching that for fifteen years.

Q. These were batches of butter that were sent to you as Dairy and Food Commissioner, in an educational contest?

A. Yes sir.

Q. And Minnesota makes good butter?

A. The best in the Union.—That is not very good.

Q. It has taken the prizes.—The idea of this whole thing was to improve the quality of the butter, if it could be done, wasn't it? A. Yes sir.

Q. And those batches of butter were sent in to be scored?

A. Yes, sir,—tested.

Q. And by scoring you mean they were sent in to have the quality and the—have the flavor and the texture of the butter inquired into? A. Color and salt.

Q. And moisture content and butter fat content?
A. I don't think the fat was tested at that time.

Q. This report shows the butter fat content?
A. I have had so many of them, that is only one of a great many.

Q. Well, this appears to be the result of 200 tests of Minnesota butter, published in the Chicago Dairy Produce of August 6, 1918, by the State Dairy and Food Commissioner, James Sorenson. "Minnesota is supposed to produce the best butter of any state in the Union. They have won a number of prizes"—— A. That is correct.

Q. "Their average has been higher than any other
273 state, in recent years, consequently their butter-makers should rank up in intelligence and skill with the average butter-maker found throughout the United States"? That is a fair statement? A. At that time.

Q. "Mr. Sorensen reports these analyses are correct". Now, I will call your attention to No. 11 upon that list, Mr. Sorensen, and ask you to examine it, and ask you to tell me what the butter fat content was?
A. 78½ per cent; moisture 17, [sale] 2.45.

Q. I will call your attention to No. 12, and ask you to examine that and give the butter fat content and the moisture content? A. Fat 81.50, moisture 15.

Q. Calling your attention to No. 27, and ask you to examine that? A. Fat 86, moisture 9.1.

Q. Moisture 9.1 was unusual? A. I would say so.

Q. I call your attention to No. 31, and ask you to give me the butter-fat content there and the moisture?
A. 77 fat, 15.71 moisture.

Q. Please look at No. 28, and give me the butter fat content and the moisture content?
A. Why not give the curd content as well?

Q. That is not especially a food [produce].
A. 5.3 curd is unusual.—78.50 of fat, 16.7 of moisture.

Q. That means 16 point 7 per cent of moisture in the butter? A. Yes sir.

Q. No. 29, how much moisture?
A. No. 29, butter fat 78.93, 17.151 moisture.

Q. No. 30? A. 76.23 fat, 17.6 moisture.

Q. Now, Mr. Sorensen, there is some butter over 17 per cent moisture that is good butter, isn't there?
A. I don't know. How do I know?

Q. You couldn't score that from the butter fat finding and the moisture finding?

A. Absolutely not. This butter may score 86 and
274 may score 96,—I don't know.

Q. In making butter, Mr. Sorensen, a butter-maker doesn't churn it so long as to break down the texture of the granules? A. Not if he is an expert.

Q. Not if he knows how to make butter? A. Exactly.

Q. Because, if he does, he damages his product? A. Yes sir.

Q. Has a product of lessened quality. No. 37, what is your moisture content? A. 12.8.

Q. No. 52? A. 81 fat, 15.8 moisture.

Q. And No. 57? A. 79½ fat, 16.2 moisture.

Q. And this summary appears to be at the end of a total of 199 samples, 39, or 9.5 per cent contain less than 80 per cent of butter fat. Of these 160, or 80.4 per cent, contained 80 per cent or more of butter fat. 128 samples, or 84.8 per cent, contained 80 per cent or more of butter fat. 80 samples, or 40.2 per cent, contained 80.2 per cent of butter fat; 49 samples, or about 25 per cent contained 83 per cent or more of butter fat. No. 192 has a moisture content of 16.1?
A. Yes sir.

Q. And No. 185 has a moisture content of 15.9 per cent.
A. Yes sir.

Q. No. 84 has a moisture content of 9.71 per cent?
A. Yes sir.

Q. No. 180 has a moisture content of 18.6 per cent?
A. Yes sir.

Q. No. 177 has a moisture content of 16.61 per cent, has it not? A. Yes sir.

Q. No. 176 has a moisture content of 15.60 per cent?
A. Yes sir.

Q. No. 137 has a moisture content of 16.3 per cent, doesn't it? A. Yes sir.

Q. No. 128 a moisture content of 17.50 per cent? A. Yes sir.

Q. No. 127 has a moisture content of 16.6 per cent?
A. Yes sir.

Q. No. 125

Q. Mr. Sorensen, on the question of standard of butter fat and moisture, you are acquainted with the recommen-
275 dation of the State Dairy Commissioners and Dairy Professors generally throughout the country?
A. As to a fat standard?

Q. Yes? A. Yes, to a certain extent.

Q. You have attended the association to take part in the discussion what the standard should be? A. Some meetings.

Q. You know it to be a fact that the general concourse of the recommendation of the states Dairy Commissioners and Dairy and Food experts is that butter fat shall be 80 per cent, and the moisture content 16 per cent?
A. That is what we have now.

Q. That is the general recommendation of dairy professors and of dairy and food professors of the different states?
A. I don't know. I for one believe the moisture standard is not necessary, if we have a fat standard.

Q. Then we have got fat here of 82.24 in this butter involved here, according to these analyses? A. Yes sir.

Q. That is more fat than 80 per cent? A. Sure.

Q. So you don't need any moisture standard in that kind of a butter? A. We have no fat standard.

Q. If the fat is 82.24, that is above 80? A. Yes sir.

Q. And 80 is fair to the consumer and fair to the manufacturer, according to your report?
A. This is unsalted butter——

Q. Butter fat is more valuable to the consumer than salt, as a food product?
A. Unsalted butter is worth more money in the market. You shouldn't compare a horse with a cow, they are two different animals,—two different kinds of butter, entirely so.

Q. Salted butter containing 80 per cent butter fat is composed of a high food constituent, isn't it?

A. It is composed of whatever the composition is; the more fat the more food value.

Q. 80 per cent butter fat is a fair standard, according to your judgment, is it not?

A. It is a fair standard, that should be the criminal limit, should be no tolerance below that in my judgment.

276 Q. You understand that, whereas that butter involved here doesn't contain any salt? A. Yes sir.

Q. It does contain, according to these analyses submitted on behalf of the government, 82.24 per cent butter fat, you understand that? A. Yes sir.

Q. And saying that moisture doesn't count, and that butter fat does count, because it is a food product,—butter containing 82.24 butter fat is above 80 per cent?

A. Yes, but a man has to pay more money for it that buys it. Isn't that true?

Q. Yes. What is the difference in the price between your salted butter and your unsalted butter?

A. 2 to 3 cents on the market.

Q. 2 to 3 cents per pound? A. Wholesale.

Q. And if there is 80 per cent butter fat in the salted butter, that butter is up to standard, as far as butter fat is concerned, isn't it, generally speaking?

A. There is no fat standard.

Q. According to your recommendation? A. Yes sir.

Q. And according to your idea of a standard?

A. I don't know.

Q. According to the standard established by law of Iowa, it is testified to 82 per cent-butter is up to standard.

A. It is according to 80 per cent standard, yes sir.

Q. That kind of butter might have 3 per cent of salt, might it? A. I suppose so.

Q. Well, unsalted butter is worth about 3 cents more a pound? A. 2 or 3,—very little of it made.

Q. Then you are paying 2 or 3 cents for that extra butter fat content, aren't you?—2.24? A. I suppose so.

Q. You are getting more for your money, aren't you, James, than you are in paying a 2-or-3 cent price less for the salted butter? A. No, I don't think so.

Q. I think you are. A. I guess not.

277 Q. Now, we will take 80 lbs. of butter, or we will take butter containing 80 lbs. of butter fat. A. Yes.

Q. Of course there is an over-run of about one-fifth?
A. Approximately.

Q. We will take butter containing 80 lbs. of butter fat, salted butter, and that is 3 cents cheaper than unsalted butter? A. Approximately that.

Q. Then three times 80, if that is the proper computation, would be $2.40 cheaper than unsalted butter?
A. I believe I can help you out on that calculation, Mr. Peterson.

Q. What is in my mind is that butter fat is cheaper to the consumer than the salt.
A.—Here is 80 parts in that 100 of butter fat, 40 cents a pound. Each part is worth 2 cents, is it not?

Q. Yes, I think so.
A. No, I am turned around. Each 2 parts is worth a cent, 40 cents a pound. You add 3 per cent more fat; there you are adding a value of a cent and a half, and the consumer pays 3. Isn't that correct? [A.] I may be wrong.

Q. You never made any butter in the State Creamery at Albert Lea Station containing 12 per cent moisture? The Creamery never made any 12 per cent—except by accident?
A. I would say might have;—if we did it was an accident. Tried to get around 15½ per cent. Had to.

Redirect Examination of James Sorensen.

By Mr. Jaques:
Q. Did you ever recommend the standard of 80 per cent?
A. I don't know as you would call it that. I have, so to speak, fought for an 80 per cent fat standard. That is not tolerance below that, which would really mean 80 per cent fat, because a man would have at least 1 point to go
278 on. I would not want 1 per cent tolerance below that, because I don't think that is necessary.

At this point in the trial of the case an adjournment was taken to 10 o'clock A. m., June 23rd, 1921.

James Sorensen called for Redirect Examination.

By Mr. Jaques:

Q. Mr. Sorensen, there was some question asked you about the teaching of the Ames Agricultural College, in reference to water content of butter, and how to manufacture it so as to contain greater moisture. What made it necessary for butter-makers to have this information?

A. Modern butter-making is pretty well adopted, as we may say, throughout the world now. As a result of inferior methods we may say that Iowa, as an example, as I am acquainted with Iowa, in 1919 we had about close to a thousand creameries. Today we have less than 500 creameries. As the moisture test was introduced——

Q. By "moisture test" you mean this regulation?

A. The regulation. And as a result thereof the method by which the butter-maker was able to determine the composition, or [party] determine, of the butter. Some of the creameries that were manufacturing butter of a high moisture content discovered their mistakes, and were able to remedy them. The other creameries that were exceedingly low in moisture content, they found out their mistakes. They found out it was not possible for those creameries to compete with other creameries, and consequently a great many of them lost out. That is one of the reasons why the schools have taken up the teaching of the newer system, so as to [protest] our industry, say, against other industries, say the European industries, and we are therefore to-
279 day manufacturing a butter containing, I will say, the average content of the Iowa butter today, I mean moisture content, is in the neighborhood of 14 per cent, as far as I am able to say, without having reliable statistics. I am getting this from the education contest we are carrying on. This is about the same as the European analysis. We are therefore teaching a method by which we are able in a way to standardize our butter today, so that we have a butter that will average in the neighborhood of that, or a butter that will not go up to 16 per cent, and a butter that will not go very low. If we find the butter too high in moisture, work it out; if we find it too low in moisture, try to bring it up, not just to the limit, but to the reasonable margin, so as to have a uniform composition.

Q. Now then, teaching the method of increasing the water content of butter was connected with this regulation of the

Internal Revenue Department, fixing a maximum of 16 per cent water in butter?

Mr. Peterson: Objected to as immaterial, no foundation being laid for the question, and purely a matter of conjecture on the part of the witness in any event, and a conclusion.

By Mr. Jaques:

Q. Now, teaching the method of increasing the water content of butter in the universities, is in connection and made necessary by the regulation adopted by the Internal Revenue Department, fixing a maximum moisture content of 16 per cent, is it not? Is it, or is it not?

Mr. Peterson: Objected to as immaterial, no foundation laid.

The Court: The question is whether their teaching is made necessary by this rule that was promulgated?

Mr. Jaques: Yes.

The Court: He may state whether that rule is the reason for teaching as they are.

280 The Witness: That is part of the reason, but not all.

By Mr. Jaques:

Q. If any number of creameries were manufacturing butter approximately of 16 per cent water content, it would not be possible for the other creameries to manufacture and market a competitive butter containing 13 per cent or 14 per cent in moisture, would it?

A. They could not continue to operate, would lose out eventually.

Q. Then this teaching of the art of increasing or adding to the moisture content was made necessary to a certain extent by the 16-per cent maximum of water content?

A. To a certain extent, yes sir.

Q. Now, I think in the course of the cross-examination you were asked whether it was practical to manufacture butter at a water content of 12 per cent, and you said that it was not. Was that—did you answer that way, because it was difficult to manufacture butter at 12 per cent or that it was impracticable, because other creameries were making their butter with 16, or approximately 16, per cent?

A. I don't believe that question was asked me.

Q. It might possibly have been another witness. Then I will ask you whether it is possible to manufacture butter containing 12 per cent moisture?

A. In a good many cases it will be possible, when the moisture content is as low as 12. Then I am not certain that you will be able to get butter containing just 12 per cent at all times.

Q. You couldn't, of course, get any per cent precisely?

A. You can not get any per cent; when you come down to low moisture standard there is a limit they have been able to get 13½, 14 naturally without much difficulty; but when you come down to those low moisture contents, that is a question.

281 Recross Examination of James Sorensen,

By Mr. Peterson:

Q. In other words, you may have a natural constituent of say 15½, may you not, arising out of the natural moisture content in the butter? A. It is——

—Q. Put it this way:—I don't see any reason for any hesitation as to that question We will churn some butter, and churn it in the usual and ordinary way, and we have a moisture test, it will be 15.5. That happens in the business?

A. Yes sir.

Q. That means that amount of water is there just ordinarily? A. Yes sir.

Q. If you churn that down to 12, you say break up the texture of your granular butter, may you not, and hurt your butter?

A. You may not do that. I will not promise you can churn it down to 12 always.

Q. If you kept on churning it until you expel moisture down to 12, you may hurt the granular texture of the butter? A. You can not do that by churning. You may——

—Q. Your butter contains 15.5, and—that means that there is that much water there; we want to get that out; we will work it awhile. That is one way of trying to get it out?

A. Yes.

Q. If you keep on working it, after a while you may work it so much as to hurt your granular texture of your globules of butter, and make them soft? A. Yes.

Q. And working it that long hurts the texture of your butter? A. Yes sir.

Q. But if you don't work it that long, and break down your cream around your globules, that makes your butter soft? A. Yes sir.

Q. And if you break down that natural, normal grain of your butter, then you can get it in a position whereby
282 if you want to incorporate some water, it will absorb it? A. Yes sir.

Q. That is what you mean? A. Yes sir.

Q. That is not the way we make butter?
—A. As a rule.—Not if we expect to have good quality butter.

Re-Direct Examination of James Sorensen,

By Mr. Jaques:
Q. There is one thing that I over-looked [asked]: You manufactured butter before this regulation was adopted, and afterward? A. Yes, sir.

Q. Can you explain to the court and jury what the change in the method or process of manufacture has been, or, rather, can you explain the old process that they used, previously adopted—previous to the adoption of the regulation, and of now—how they varied?

A. May I have just a few seconds to outline in my own mind, before I speak? I may not be able to cover every detail—in fact, I feel certain I don't know all of the details, but I started to make butter at a time when we were using the old system. We were making the butter in what was known as a Fox Churn. It was a big affair, square box, without inside contrivances. After the butter was churned we will take the butter out of the churn with paddles, placing it on a butter-worker, usually a Mason butter-worker, a round table that revolved and passed two rollers that were also revolving and working the butter. This table was slanting from the outside to the center, and therefore when you worked the butter with your paddles it passed under the rollers and the moisture escaped,—was pressed out.

In that way the moisture disappeared as fast as you
283 were able to work it out. With a more modern [systen]
of manufacture the combined churns were introduced. I used the first one, I believe, in the year of 1899, at the Iowa State Fair. I was representing the College at that time in making butter, and I believe that was the first churn, combined churn, that came to Iowa. It took a few years until they were introduced generally. Now the difference is this: there you have the rollers in the churns, or rather the butter-worker in the churn. When you are through churning then you wash the butter the same as you did by the old system,—you drain it and press it throughout the rollers. Now it is not possible to drain quite as closely there as you can by the old method; there will naturally be a small amount of moisture left, that will have to be taken out. Another change is, at that time we worked the butter two or three times. We would place it on the butter-worker. We would work it a few revolutions of the worker, pack it in a tub, place it in a refrigerator, take it back in two or three hours, and work it again; put it back to the refrigerator again, and possibly work it a third time,—two or three times in that way produced a very dry-appearing butter. After the combined-churn-and-worker was introduced, we found that that was not necessary, and at the same time the creameries became larger, many of the creameries. A creamery where I worked in, we manufactured up to 20,000 lbs. of butter a day. We could not put it away that way; it was not practicable, and we worked it with one working. In that way the butter was naturally softer all the time, and there would be more moisture retained in the butter than there would have been if we had followed the other system. Then, at the present time, or later, or about the same time as the standards came in, as the men who were manufacturing butter of a high moisture content reduced the [content] of moisture, and the other increased it somewhat, we began
to make a study of conditions that will influence the
284 moisture control of butter, and we found that there
was some certain methods by which we could usually retain the moisture, or rather, by which we could obtain a definite moisture content, so that we at all times will have a moisture content differing only a half-per cent or so, not to exceed 1 per cent, and we found that that was regulated mainly by temperatures. And I will also say, in justice of our way of teaching it, that if we had a low moisture content we justified—we felt we were justified in adding a little

water to the salt, so as to increase the moisture content, so that we at all times have a butter that is of uniform composition. That is what we considered. Any product that is sold on the market at the present time should be uniform product, and we considered a butter product should be just the same, in order to be as salable as any up-to-[day] products. I have, I know, omitted a good many things I did not think of, but that is as near as I could explain that in a 13——

Mr. Peterson: That appears to be the way the butter was made here, shows an average of 15.65 moisture content, according to the churning tests. You get the moisture content from the churning tests in the making of butter, don't you?

The Witness: Yes sir.

Mr. Peterson: And you try your best to keep within the standards?

The Witness: Yes sir.

Mr. Peterson: That is the teaching and that is regular?

The Witness: Yes sir.

(Witness excused).

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285 SYDNEY C. THOMPSON, being first duly sworn to tell the truth, the whole truth, and nothing but the truth, testified as follows on behalf of the defendant.

Examination in Chief.

By Mr. Jaques:

Q. Mr. Thompson, where do you live?

A. Washington, D. C.

Q. How long have you lived there?

A. Since April 1, 1908, with the exception of a year and a half.

Q. Are you in the government service?

A. I am employed by the Bureau of Animal Industry of the United States Department of Agriculture.

Q. And have you been connected with the Department of Agriculture about all the time you have been at Washington?

A. Yes sir.

Q. Have you ever had practical experience in the manufacture of butter?

A. Yes. I began as a butter-maker in a creamery in 1899.

Q. How long did you work as a butter-maker?

A. Until May 1903.

Q. Where were you trained? Where did you get your training for butter-making?

A. The experience that I had was in Winterport, Maine, and I attended the short course, University of Wisconsin short course, in Dairying, the winter of 1903 and '04.

Q. Did you hold any position in the State of Maine?

A. I was Dairy Instructor for the State of Maine from 1903 to 1908.

Q. What are your duties in connection with the Department of Agriculture, in connection with butter?

A. I am in charge of dairy manufacturing investigations, which include investigations in creamery and cheese factories operation, and until a short time ago supervised the extension work with creameries and cheese factories. I supervised the inspection of Navy butter, and the inspection of renovated butter factories.

286 Q. So that you are still in touch with the matter of butter-manufacturing? A. Yes, I think so.

Q. That is the Agricultural Department issued bulletins in connection with this matter of water content of butter?

A. Showing the water content of butter? Yes.

Q. Have you had anything to do with the tests made by the Agricultural Department in that connection of water content?

A. I secured the samples and outlined an investigation to determine the composition of butter, in 1911.

Q. Does that test appear in government bulletins?

A. It is published as Bulletin No. 149, I believe.

Q. You may look at Exhibit 6 and see whether that is the bulletin to which you refer? A. It is.

Q. What page of the book is the statistics of this test on?

A. Page 10.

Q. Can you tell us in a general way what the test indicates, as to water content of the samples analyzed, as to the average of them?

A. The average of 695 samples was 13.9 of water.

Q. What parts of the country?—That relates to creamery?
A. Creamery butter.

Q. In what part of the country?
A. From 14 states, from Maine to California, both states were included.

Q. That includes Minnesota, do you know? A. Yes.

Q. Have you in mind any other test of this character that is shown in the bulletins of the Department?
A. Yes, the work of Major Alvord, former chief of the dairy division bureau and industry—Bulletin 39.

Q. Do you know what the test there showed?
A. The average of 730 samples showed 11.78.

Q. I understand you have not manufactured since this regulation went into effect, actually manufactured, yourself?
A. I have not been a butter-maker in a creamery since——

Q. You have inspected creameries?
287 A. In my official work that has been one of my duties to visit creameries, and even to make churning of butter.

Q. The department itself sometimes runs creameries, does it?
A. The department is operating a creamery, has been since May 1915, and that has been under my supervision.

Q. Do you have knowledge of processes—manipulations used in the manufacturing? A. Yes.

Q. And knowledge of methods of control of water content?
A. Yes.

Q. In what way, if you will tell us, was your method of manufacture different from the method of manufacture outlined by the evidence in this case?

Mr. Peterson: Objected to as immaterial.

The Court: We do not understand whether the creamery operated under his supervision is an ordinary commercial creamery, or sort of laboratory creamery.

The Witness: It is a commercial creamery, operated as a commercial creamery.

The Court: He may answer.

Mr. Peterson: Exception.

The Witness: Our method of manufacture is to use a temperature for churning which will cause the butter to gather to the size of wheat or corn kernels, between those, in from forty-five to sixty minutes. The butter-milk is drawn off, wash water is added for the first few moments. In adding the wash water it is sprayed over the butter granules with a hose. It is then—the vent is closed, and water equaling the amount of butter-milk is allowed to run in the churn. The churn is revolved for one or two revolutions, and the wash water is drawn off. It is drawn off entirely. We aim to leave a little free moisture in the churn in washing the butter granules. When that point is reached the
288 openings are closed, the churn is closed tightly, and the working begun, and working is continued until the water is absorbed. We aim to get from 15 to 15½ per cent of water.

By Mr. Jaques:

Q. In view of the regulation of internal revenue butter?

A. Why, that, or because your competitors are getting that quantity of water.

Q. Now, would you consider twenty-five to thirty minutes a short time to churn, under ordinary conditions?

Mr. Peterson: Objected to as immaterial, no proper foundation laid; it appearing that the time of churning is only one of the elements, and it appearing that the time of churning is only one of the processes; and consequently there is washing and reworking and testing, and the taking of a moisture content finally resulting in below the 16 per cent.

The Court: I think he may answer.

Mr. Peterson: Exception.

The Witness: I should consider the churning period of twenty-five to thirty minutes to be one that would produce what I would term a soft butter.

By Mr. Jaques:

Q. A soft butter. Can you tell the court and the jury what effect that has on water content?

A. The softer the butter, up to a certain point, the more water it will retain.

Q. Why would this soft butter retain more water?

A. The principle governing in that I can't explain, but it has been shown in practice to my satisfaction, and I don't feel that I am competent to undertake to explain the principle.

Q. It is a fact from tests that it does retain more water?
A. Yes sir.

289 Q. Supposing, Mr. Thompson, that the standard had been fixed at 14 per cent moisture in butter, would it have been more difficult, or less difficult to approximate it to that point of moisture, than to the point of 16 per cent?
A. I don't know that there would be any material difference, either one of them can be approximated without great difficulty.

Q By the process of manufacturing? A. Yes sir.

Q. As I understand it, then, it is not more difficult to get butter containing 16 per cent moisture than to get a butter containing approximately 14 per cent moisture?
A. No, I don't think it is more difficult.

Cross Examination of Sydney C. Thompson,

By Mr. Peterson:
Q. You say it is not more difficult to get a moisture content of 16 per cent than 14 per cent? A. Yes sir.

Q. Counsel meant it the other way, more difficult to get butter at 16.
A. I would say it was not more difficult to get butter at 16 than at 14.

Q. You would have to expel some more moisture, wouldn't you? A. Well, I wouldn't have the moisture in.

Q. Well, it is in the original cream, isn't it?
A. As much as that per cent of moisture is in the original cream.

Q. Generally speaking the manufacture of butter is segregating the butter-fat in the cream, and eliminating the moisture down to under 16 per cent, speaking in a general way?
A. Yes sir.

Q. The question of expulsion of moisture and segregating and coalescing butter-fat? A. Yes sir.
Q. And in your process down there in your creamery down in Washington? A. In Grove City, Pennsylvania.

290 Q. At a certain point you add a little moisture and incorporate a little moisture? A. Yes sir.

Q. In other words, to that extent you down there cause the absorption or incorporation of moisture to a small extent? A. We do.

Q. Insofar as that is a process of incorporating or absorbing, as distinguished from the general process of elimination of moisture? A. Yes sir.

Q. And you aim to hold it down to about 15.5? A. Yes sir.

Q. Of course you can have good flavor butter and good texture butter at 15.5? A. Yes sir.

Q. Just as good a flavor and just as good texture as 15 per cent moisture? A. Yes sir.

Q. Or 14? A. For commercial purposes.

Q. And so 15.5 may be, for commercial purposes, just as good flavor and just as good texture butter and scored just as high, as 15.5? A. Yes sir.

Q. Now, do you know Professor Hunsicker? A. Yes sir.

Q. He is an authority? A. I think so.

Q. Connected with the university? A. At one time.

Q. Now he is with the Blue Valley Creamery Company, Chicago, Illinois? A. I believe so.

Q. Purdue University. And the University and the government made some findings and investigations on moisture control? A. I think so.

Q. And you taught dairying in the State of Maine?
A. I was dairy instructor with the Department of Agriculture, and the College. We taught it in a general way, in that we went from place to place.

Q. You were with the government?
A. With the state government. Now with the federal government.

291 Q. What I mean, having something to do with physical things in connection with the Department of Animal Industry in the Department of Agriculture, you have made a study of the dairy business and you have been a butter-maker? A. Yes sir.

Q. And you know there is a learning, don't you, and opinions of dairy professors on moisture control, on why soft granules tend to retain more moisture than hard granules, you know there is a discussion about it? A. Yes sir.

Q. But personally you won't give the reason for it?
A. Why, I stated that I didn't feel competent to discuss that, because I am not a physiologist.

Q. Well, you know general physical properties of water and churning of cream into butter? A. Yes sir.

Q. You are not a chemist? A. No.

Q. Well, you know generally what effect temperature—you know generally why cream is cooled in the process of the manufacture of butter? A. Yes sir.

Q. Or cooled down to about 48, 54?
A. That is a reasonable range.

Q. Of course the range is somewhat in the judgment of the fellow making butter in the particular locality from day to day? A. Yes sir.

Q. Well, you know that the general tendency is that if your temperature is low it tends to hardness of your granule?
A. Yes,—of the fat.

Q. It tends to hardness of the granule of the fat?
A. Yes sir.

Q. And churning is a concussion process isn't it?
A. Yes sir.

Q. And so, if a lower temperature tends to harden it, higher temperature tends to softness of your granula of butter-fat? A. Yes sir.

Q. Now, I read from Professor Hunsicker as to why soft butter has a tendency to retain—not to absorb—re-
292 tain, or hold, the moisture—"retain" is the proper word? A. I think so.

Q. It doesn't mean an incorporation of water from the outside, does it? It means to hold the constituent part of the water that is there, instead of expelling it? A. Yes sir.

Q. Isn't this a good reason why hard granules tend to expel moisture, and soft granules tend to the contrary: "The firm butter granules are subjected to successive concussion,

becoming compact and hard; this favors the expulsion of moisture". Isn't that a good physical reason?
A. I think so. It sounds reasonable to me.

Q. By that token—churning at a relatively higher temperature gives you a softer butter, with less firmness of fat granules, and less concussion, and therefore a tendency in a greater degree for the softer granules of butter fat to retain enough to throw off—not to expel—the moisture?
A. By that token, I should say so.

Q. Of course, Mr. Thompson, temperature is only one of the elements entering into the manufacture of butter, isn't it? A. That is all.

Q. Your churn is one thing? A. Yes sir.

Q. Your butter-maker is one thing? A. Yes sir.

Q. Your cooling system is one thing? A. Yes sir.

Q. Washing system is one thing? A. Yes sir.

Q. Working system is one thing? A. Yes sir.

Q. And your butter-fat content in the cream, whether rich or thin, is also an element? A. Yes sir.

Q. When we are talking about temperature it is only one of the things entering into the making of butter?
A. That is all.

Q. Well, do I understand that your department has to do with the inspection of creamery and the investigation of the methods of the manufacture of butter?
A. We have no express authority——

Q. Do you inspect?
A. No, we don't make inspection of creameries.

293 Q. Your men don't visit creameries?
A. We visit creameries to do educational work.

Q. Do you visit them officially? A. Yes sir.

Q. Do you visit them in a supervisory sense, or instructional sense? A. Yes sir.

Q. Then, according to your department, would it be proper enough with a moisture content of 14 per cent, found in your moisture test to incorporate water up to 15.5?
A. We considered it so.

Mr. Jaques: That is because you have treated this rule fixing the 16 per cent as valid?

Mr. Peterson: I just asked that for my own information.

By Mr. Peterson:

Q. With it all you expect, with reasonable efforts, to hold your moisture content down to under 16? A. Yes sir.

Q. And what you are interested here—what you are interested in here, Mr. Thompson, is the validity of the 16 per cent regulation, isn't it? A. Yes.

Q. Of course you may have butter of a good flavor and good quality that has a moisture content of 16.1? A. Yes.

Q. Now, in your bulletin there, Mr. Thompson, you gave an average, according to that bulletin, of moisture content, 13.9. Does your bulletin also give an average of the butter-fat content? A. Yes, it does.

Q. What is it?

Mr. Jaques: Just take 100 per cent.

By Mr. Peterson:

Q. What is it? A. 82.41.

Q. That was the average of the butter-fat content of all those samples of butter collected from all those creameries? A. Yes sir.

Q. Average? A. Yes sir.

Q. Is 82.24? A. Yes sir.

294 Q. Slightly under that average? A. Yes sir.

Q. But 82.24 would be higher than a standard, on the basis of 80? A. Yes sir.

Q. Now, Mr. Thompson, I have in my hand here a text book, "The Book of Butter", which is a [test] book on the Nature, Manufacture, and Marketing of the Product, by Edward Sewell Guthrie, Professor of Dairy Industry, New York State College of Agriculture, at Cornell University. Do you know him? A. I do.

Q. He is an authority? A. Yes sir.

Q. I will just ask you to read under the general subject matter of Composition and Food Value of Butter, on top of

page 11 of the book. (which the witness apparently does). You have it? A. Yes sir.

Q. There is a reference there to one Thompson. Are you the Thompson? A. I am.

Q. Just read the first sentence there?
A. Under "Water"? "According to Thompson, Shaw and Norton, the average percentage of moisture in butter is 13.9, and the variation is 10.13 to 20.65".

Q. The author is within his rights in making that observation? A. It is taken from this bulletin we have here.

Q. In other words, it is not a mis-quotation? A. No.

Q. And Shaw and Norton are likewise authorities?
A. They are chemists.

Q. Turning to the same book, on page 8, under "Fat", I will ask you to read the first sentence of that, which I have marked.
A. "The variation in fat, according to Thompson, Shaw and Norton, is between 73.49 and 67.39, per cent."

Q. You are the Thompson referred to there?
A. Undoubtedly.

Q. And that doesn't do violence to the fact—it is within—the author is within his observation? A. I presume so.

Q. At least you don't say that he is not.

295 Redirect Examination of Sydney C. Thompson,

By Mr. Jaques:
Q. At that government creamery you manufacture butter, the government creamery there in Pennsylvania, you manufacture butter, and endeavor to retain in it moisture up to 15.5? A. Yes sir.

Q. You do that because you treat the 16 per cent—the fixing of 16 per cent moisture in butter as abnormal by the rule adopted by the department of internal revenue?

Mr. Peterson: That includes the word "abnormal". I think the question might be proper enough if confined to color of validity of the rule.

The Court: He may state the reasons why they attempt to confine the moisture content to 15.5.

The Witness: We attempt to keep it below 16, because that is the standard set to which our competitors are aiming, and in order to maintain our business on the same basis with our competitors we find it necessary to do that.

(Witness excused).

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PETER VALAER, being first duly sworn to tell the truth, the whole truth, and nothing but the truth, testified as follows, on behalf of the defendant.

Examination in Chief,

By Mr. Jaques:

Q. Where do you live? A. Washington, D. C.

Q. You are in the government service?

A. I am a chemist, employed by the Commissioner of Internal Revenue.

296 Q. With headquarters at Washington?

A. Washington, D. C.

Q. You are not a butter-maker and never have been?

A. I made butter for the purpose of finding out something about the elements controlling butter-making, but I am not a butter-maker.

Q. Do you travel inspecting creameries? A. No.

Q. Where were you educated?

A. I took a four-years course in Chemistry at the North [Caroline] College, West Raleigh. I afterward graduated from George Washington University.

Q. How long have you been with the government as a chemist? A. Fourteen years.

Q. You are familiar with the statistics that have been produced here as to water content?

A. Yes, I made a study bearing on the statistics, bearing on moisture content of butter.

Q. And have you access, or with you, any bulletin upon that subject, other than what we have considered in the case so far?

A. Yes, I have some bulletins that were published by experiment stations other than have been mentioned here, as well as some experiments under my own account, under the

jurisdiction of the Commissioner of Internal Revenue. I have here the analysis of 261 samples, which were taken by revenue agent Nut, who was here in court up to yesterday, for the purpose of finding out the percentage of moisture that was found in the butter in cold storage, in Buffalo, New York. He took—he sampled quantities of butter which represented over 100,000 lbs. He sampled in every case ten tubs. The maximum moisture content of that butter, the highest sample, was 16.18, and the lowest was 9.77, with a general average of 13.9. There was only one sample out of that—of those 261 samples that I analyzed, that contained over 16 per cent moisture,—16.18.

Now, besides the bulletin 139, which has already been gone into, the Thompson and Shaw's Bulletin, the Bulletin 137 Agricultural experiments obtain, and the Bulletin 139,
297 which show—edited by Lee & Barnhard, which gives the analysis of 574 samples, gave an average of 13.5 per cent of moisture; I have bulletins—one of the Idaho Experiment Station, in which they say—here is an account by Professor McKay: "The percentage of moisture in creamery butter is quite low.—This was published in 1912, being 3.4 per cent under the 16 per cent on the average. This means that about 3 per cent more butter could be made from the same amount of butter fat—this is a statement by Professor McKay, incorporated in the bulletin of Idaho Experiment Station.

Mr. Peterson: I don't think you better read that.

The Witness: Bulletin 170 of the [Vermond] Agricultural College, they give the Danish Butter, the finest—as a class—in the world, averages only 14 per cent. Scandinavian, German and French butter, 13 to 14 per cent. The average creamery butter of the United States appears to carry 12 per cent. That was published in 1912. That is practically all I have, other than has been already mentioned.

Q. Did you ever make a chemical test of butter?
A. Yes, I made analysis of butter——

Q. You analyzed some of the exhibits here?
A. Yes, I analyzed practically about 25 per cent of these samples—in the evidence.

Q. Did you ever make a test to determine the character of the moisture, or the water, contained in the butter that you analyzed, as to whether it was originally a part of the constituent cream, or other water?

A. I have analyzed butter before it has been washed, and analyzed it after it has been washed. My method of analysis—I have made several—arrived at the conclusions in several ways. One was the method described by Mr. Doran, in which the unwashed samples of butter were melted and the water of that analyzed, and the water—the wash sample and the water of that analyzed and made the comparison,
and the water which was in the unwashed sample con-
298 tained numerous ingredients, a large quantity of ingredients that were not contained in the water which was washed. Then I analyzed a sample—a whole sample of butter, washed sample and unwashed sample, and there was a difference in curd and lactose and other constituents of butter, and I have analyzed the water which—the wash water that run through from the churn, as against the wash water that has run after the butter-milk has been drained off, and there is—in that solution of water—in the water which is a butter-milk—that is [dried] off, is quite different from the water which runs from the wash water.

Q. Did you establish the relative proportion of outside waters, you might say, and the water which had been a part of the constituent cream? A. Yes sir.

Mr. Peterson: Objected to as immaterial, it being conceded in the record here that washing is a necessary process in the manufacture of butter.

Mr. Jaques: Sure, a necessary process! But this evidence tends to show that the butter absorbs the wash water, retains it.

By Mr. Jaques:

Q. You may state.

A. The water which was drawn from the unwashed sample contained——

—Q. I don't mean what they contained, but after the butter is made, and you analyzed it, take the water, what proportion is outside water and what proportion that was in the cream originally?

A. Approximately, from the materials that were in solution, would be about half the water.

Q. Half of each? A. Yes sir.

299 Cross Examination of Peter Valaer,

By Mr. Peterson:

Q. Just one or two questions, Mr. Valaer. After the butter is churned, the butter-milk is drawn off, isn't it?

A. Yes sir.

Q. And then the granular substance of butter remaining is washed, to wash out any clinging particles of butter-milk and curd? A. Yes sir.

Q. And there is a revolution of the churn, a revolution of two or three—to wash the butter-milk off, and then the vents are opened and it is drained off? A. Yes sir.

Q. That is what you call the washing process? A. Yes sir.

Q. And that appears to be generally done in making butter, doesn't it? A. Yes sir.

Q. As I understand you, you have made a moisture content test of the butter before and after washing?

A. Yes sir, I have made it.

Q. Now, have you got any statistics in your there?

A. I have in (indicating) here. I have a record here of my experiments.

Q. Pick out one and give me your figures, moisture content before washing—before washing give me your figures.

A. The moisture content of Churn No. 614, before washing was 13.96, and after washing 12.74.

Q. Then the washing process there resulted in the—in less moisture being retained after washing than before?

A. Yes sir.

Q. Well, give me another instance.

A. Churn 615 had before washing 12.34, after washing 11.47.

Q. Less after washing than before? A. Yes sir.

Q. Do you mean to say, in your conclusion that there is that variation which you mention, but also, in connection with it, some substitution of H2 O, that is, water?

A. Yes sir.

300 Q. From the wash water—from the water that is poured through the hose into the churn, some substi-

tution and incorporation of that water into the butter after washing, is that what you mean?

A. Yes, has gone in to take the temperature of the wash water.

Q. But with the final result it is?

A. Yes,—that is what the result showed in this case.

Q. Well you heard the testimony of Mr. Forby, one of our men? A. Yes sir.

Q. That showed the same tendency?

A. Practically the same principle.

Q. So that is not an operation of incorporation or absorption of water?

A. It is a usual process in the manufacture of butter, washing is a natural and ordinary process.

(Witness excused).

Mr. Jaques: Government rests!

Mr. Peterson: We rest!

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Mr. Jaques: About the manufacturer's tax; we have made two or three efforts to stipulate about that, and I want to have it in the record that the Tilden Produce Company, St. Paul, Minnesota, were assessed the manufacturer's tax, penalty amounting to $450.00 on this butter, which tax was paid.

Mr. Peterson: In connection with that I make this statement, Your Honor: We all labored under the impression that only the stamp tax had been assessed. By checking the record it appears, June 21, 1920, $675.00, stamp tax penalty assessed was paid by the Tilden Produce Company, under protest.

301 Mr. Jaques: I don't stipulate any under protest. It is not in this case.

Mr. Peterson: You are trying to put it in this case.

Mr. Jaques: Just the fact that stamp tax was assessed and paid.

Mr. Peterson: We refuse to have that——

—Mr. Jaques: Have you got the papers showing it was under protest?

Mr. Peterson: Yes sir. I say the fact is it was paid under protest, all these things were paid under protest, been doing it for years. I talked to Mr. Nut. He said this, that in the event we are entitled to a recovery here, we are entitled to have this come back again. We can't sue for it without first making an application for refund and recovery. The stamp tax was levied in connection with the other—we paid it under protest, and we will have to make an application for refund before we can sue for it.

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The plaintiff thereupon requested the Court to instruct the jury as follows:

Instructions to Jury requested by plaintiff.)

I.

You are directed to return a verdict in favor of the Tilden Produce Company for the amount sued for.

II.

You are instructed that the 16% rule, so-called, promulgated by the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury, is void.

III.

You are instructed that the testimony is insufficient to
302 support a finding that the butter in question contained an abnormal amount of moisture, and you are not permitted to find a verdict in favor of the defendant on that question of fact.

IV.

You are instructed that the testimony is insufficient to support a finding that in the manufacture of the butter in question a process or material was used with intent or effect to cause the butter to absorb abnormal quantities of moisture, milk or cream, and you are not permitted to find a verdict in favor of the defendant on that question of fact."

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Defendant thereupon requested the Court to charge the jury as follows:

(Instructions to Jury requested by defendant and denial thereof.)

"I.

The Act of May 9, 1902, in Section 4, provides that any butter in the manufacture or manipulation of which any process or material is used with intent or effect of causing the absorption of abnormal quantities of water, milk or cream, is adulterated butter. It appears clearly in this case that following the enactment of the above law, the Commissioner of Internal Revenue, by and with the consent of the Secretary of the Treasury, made and promulgated a regulation which provides as follows:

'The definition of adulterated butter as contained in the act of May 9, 1902, embraces butter in the manufacture of which any process or material is used whereby the product is made to "contain abnormal quantities of water, milk or cream," but the normal content of moisture permissi-
303 ble is not fixed by the act. This being the case it becomes necessary to adopt a standard for moisture in butter, which shall in effect represent the normal quantity. It is therefore held that butter having 16 per cent or more of moisture contains an abnormal quantity and is classed as adulterated butter.'

This regulation has all the force and effect of law, and was and is binding upon the plaintiff in this case, and I therefore charge that if the butter in question contained 16 per cent or more of moisture, then plaintiff can not recover for the reason that such butter is adulterated within the meaning of such regulation.'

The Court: Request denied.

II.

"You are instructed that if you find from the evidence that the butter involved in this case contains 16 per cent or more of moisture, that you must find that it contained an abnormal quantity of moisture.

The Court: The second request is denied. This request would be in the face of the decision in 195 Federal, 657, therefore the second request will be denied.

Mr. Jaques: Defendant have an exception to each?

The Court: An exception may be noted to each request denied.

Mr. Jaques: Third, I request that the court instruct the jury that if the jury believes that the plaintiff was accorded an opportunity to be heard by the Commissioner upon the question whether the butter was adulterated, and did not take advantage of that opportunity, then their verdict must be for the defendant.

The Court: I think that must be denied.

Mr. Jaques: Exception.

Mr. Jaques: And the next request that I make is that
304 if—the Court to instruct that if in seeking to bring the moisture content as near to 16 per cent as possible plaintiff overstepped the mark, then the verdict must be for defendant.

The Court: That must be denied, because it assumes anything over 16 per cent is necessarily abnormal.

Mr. Jaques: Then I ask the court to instruct the jury that if plaintiff has adopted any process, used any material, or in any way manipulated its butter so as to cause absorption of more moisture than would ordinarily be absorbed, and 16 per cent or more has been inadvertently absorbed, then the verdict must be for the defendant.

The Court: Denied.

Mr. Jaques: Exception.

Mr. Jaques: Then I request the court to instruct the jury that if it believes that the butter in question contains 16 per cent or more of moisture, then you are instructed as a matter of law that the moisture content was abnormal, and your verdict must be for the defendant.

The Court: That is based on the assumption that 16 per cent is abnormal. Denied.

Mr. Jaques: Exception.

Mr. Jaques: I make a general request that the court instruct the jury to find for the defendant.

The Court: Denied.

Mr. Jaques: Exception.

305 (Court's rulings on motions for directed verdict, verdict directed for plaintiff and exceptions thereto.)

The Court:

This action is brought by the Tilden Produce Company as plaintiff, against E. J. Lynch, as Collector of Internal Revenue, as defendant, to recover certain moneys paid by the plaintiff, under protest, as taxes, assessed by the Commissioner of Internal Revenue, which taxes the plaintiff claims were unlawfully assessed against him.

Now that the evidence has been completed, both sides move for a directed verdict, with certain requests, which if granted in effect would be directing a verdict in favor of the particular party. The defendant's motion and requests are based upon the theory that a certain rule or regulation promulgated by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, is controlling in the case, and is a valid rule and regulation. The rule in question reads as follows:

> "The definition of adulterated butter as contained in the act of May 9, 1902, embraces butter in the manufacture of which any process or material is used whereby the product is made to 'contain abnormal quantities of water, milk or cream,' but the normal content of moisture permissible is not fixed by the act. This being the case it becomes necessary to adopt a standard for moisture in butter, which shall in effect represent the normal quantity. It is therefore held that butter having 16 per cent or more of moisture contains an abnormal quantity and is classed as adulterated butter."

I observe that in that rule as promulgated there is quoted the following words "contain abnormal quantities of water, milk or cream". I suppose that was intended to be a quotation from Section 4, chapter 784, 32 Stats. at Large, the Act of May 9, 1902; but I observe by looking at the wording of that section that the language contained therein is not "contain abnormal quantities of water, milk or

306 cream", but the "absorption of abnormal quantities of water, milk or cream." I don't know whether the rule is correctly quoted in the decision—reading from 195 Federal, or not, but if it is, the purported quotation in the rule from the statute, as I read the statute, is not a correct

quotation. Passing that by; the Circuit Court of Appeals of this circuit has held that the rule in question is invalid, for various reasons. That holding is found in the case of United States v. 11,150 lbs. of Butter, 195 Fed. 657. The decision of the Circuit Court of Appeals is of course binding upon this court. So that the rule or regulation which I have quoted must be held by this court to be invalid, and not controlling in the case, and the case must therefore be considered as if there were no such rule or regulation in force.

It follows that the motion and requests made by the defendant must be denied.

The plaintiff's motion and requests are based on the assumption that this rule is not valid, or controlling in the case, and further, on the assumption that if the 16 per cent rule is dropped out of the case, there is not sufficient evidence in the case upon which a verdict could be based for the defendant; but the evidence is claimed by the plaintiff to show that the tax in question was unlawfully assessed, and that it is entitled to a recovery of the money paid under protest. Now the statute, so far as here material, reads as follows:

> "Adulterated butter is hereby defined to mean a grade of butter produced by mixed, reworking, rechurning in milk or cream, refining, or in any way producing a uniform, purified or improved product from different lots or parcels of melted or unmelted butter, or butter fat, in which any acid, alkali, chemicals or any substance
> 307 whatever is introduced or used, for the purpose or with the effect of deodorizing, or removing therefrom rancidity."

[The] includes one class of adulterated butter,

> "or any butter or butter fat with which there is mixed any substance foreign to butter, as herein defined, with intent or effect of cheapening in cost the product;"

That is another class of adulterated butter,

> "or any butter in the manufacture or manipulation of which any process or material is used with intent or effect of causing the absorption of abnormal quantities of water, milk or cream";.

That is the third class of adulterated butter, and it is that class of adulterated butter that the government claims has been manufactured by the plaintiff here, and on which the tax was assessed.

So that the main, broad question in the case is whether the butter in question upon which this tax was assessed was adulterated butter within the meaning of the last clause of the statute that I have read; that is, Was the butter in the manufacture or manipulation of which any process or material was used with intent or effect of causing the absorption of abnormal quantities of water, milk or cream.

Now that main, broad question involves several subordinate questions. The statute uses the expression "abnormal quantities of water", and the question at once arises what is an abnormal quantity of water in butter? The word "abnormal" in my view is a very unhappy word to be used in that statute. However, the word is there, and it must be given a construction. Abnormal is generally defined as meaning a deviation from a fixed rule or a fixed standard; something that is irregular, and the question then arises whether there is a fixed rule or standard for the [quality] of water in butter. Now the evidence in this case
308 shows that butter has been and may be produced having a water content varying from 9 per cent to over 20 per cent. The evidence further shows that the water content of butter manufactured in creameries throughout the country has varied to a very considerable extent during the past ten or fifteen years, always, I think, in the direction of an increase of the amount of water. The evidence also shows that the water content in butter may be controlled, at least within certain limits, by the butter-maker. In fact the evidence shows that some butter-makers commonly get a higher water content in their butter at the time of the first test, and thereafter, by working the butter, reduce the water content, until it reaches what they consider is the proper amount of water to be contained in butter, in order to make it marketable, in competition with that of other butter-makers; whereas other butter-makers not infrequently get a lower water content than they wish to have in their butter as finally made and placed upon the market, and when they do get that lower water content they deliberately, by working the butter with an additional amount of water actually incorporate more water into their butter, until it is brought up to the point where they consider it contains the proper amount of water to be placed upon the market in competition with that of the other butter-makers.

Now that being the state of the evidence, it does not seem to me that it is such the jury could properly find that there was a fixed standard of water content for butter, made as it is made throughout this country by the creameries in their ordinary manufacture of butter, and by the ordinary methods that are used by the creameries. And if the jury would not be authorized under the evidence to find that there was a fixed standard for the quantity—for the water content of butter, it would necessarily follow, in view of the
309 evidence in this case, that they would not be in a position to determine whether or not the plaintiff's butter contained an abnormal quantity of water. Further than that, this statute reads, in defining adulterated butter, that it is butter "in the manufacture or manipulation of which any process or material is used, with intent or effect of causing the absorption of abnormal quantities of water, milk, or cream. The word absorption is also a word that requires definition or explanation. I think the word should not be given a very narrow meaning in the statute as used; but it should be broad enough to include the incorporation of water, whether it might be technically called absorption or not. But, whether it is called absorption or whether it is called incorporation, I think the statute means that the water is to be introduced into the butter from the outside. In other words, that the retention in the butter, while it is being manufactured, of part of the water which was originally in the cream even to a large extent, would not be an absorption of water in the butter within the meaning of the statute; that there must be some process by which water from outside of the butter is caused to be absorbed or incorporated into the butter, before the butter can properly come within the statute that I have read. Now, if that is the true meaning of the word absorption as used in the statute, then when we come to apply that to the evidence in this case we do not find, in my judgment, any evidence such that the jury would be able to base a finding thereon that the plaintiff in the manufacture of its butter had used a process which would cause the absorption or the incorporation of abnormal quantities of water in the butter, before it finally reached its completed stage. For these reasons, it seems to me that the evidence is not sufficient on which the jury
310 could find that the butter manufactured here by the plaintiff was adulterated butter, within the meaning of the statute. And unless they find that it was adulterated butter within the meaning of that statute, it follows as a matter of law that the tax assessed against it by the Commissioner of Internal Revenue was unauthorized.

I am of opinion that the plaintiff has shown that the butter was not adulterated within the meaning of the statute, and that therefore it is entitled to recover the amount demanded.

The motion on behalf of the plaintiff for a directed verdict will, therefore, be granted, and the jury will be instructed to find a verdict for the plaintiff in the sum of $936.00, with interest thereon at 6 per cent since December 11, 1918. That may be computed by counsel, so that the amount may be incorporated in the verdict, without the necessity of the jury retiring to make the computation.

Mr. Jaques: Exception to the instruction of the Court that the jury find for the plaintiff.

The Court: An exception may be noted.

(The jury thereupon returned a verdict in favor of the plaintiff, in accordance with the instruction of the Court, in the sum of $936.00 and interest).

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311 Plaintiff's Exhibit "A".

"Nov. 19 1918.

Tilden Produce Co.,

St. Paul, Minn.

Gentlemen:

This is to advise you that one hundred fifty-six samples of butter of a lot of three hundred fifty —60 lb tubs shipped by your company Lot #91313 to the Chicago cold Storage Co have been analyzed by the Chemist of the Bureau of Internal Revenue and found to contain excess moisture over a maximum per-mitted by law and regulations, classing this butter as adulterated butter. This butter was shipped by your company from St. Paul, Soo Line, Car No 7198, received by the Chicago Cold Storage Co on Oct 15, 1918 placed in storage for your account.

Under the facts presented in the foregoing, special and stamp tax liability would seem to be clearly incurred as manufacturers of adulterated. Before reporting the liability, I would thank you to advise me as to when this particular lot of butter was churned by your company; how many churnings it represents, and furnish this office with any statement you may desire, showing cause, if any you have, why the tax should not be asserted in this case.

Awaiting your early reply and thanking you in advance for the information requested, I am,

Very respectfully,

L. G. NUTT,
Supervising Agent."

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312 Plaintiff's Exhibit "B"

Nov. 20, 1918.

Mr. L. G. Nutt, Supervising Agent,
Internal Revenue Service
Chicago, Ill.

Dear Sir;

Your letter of the 19th just received relative to the 350 tubs of butter we have in Chicago Cold Storage.

We are very much surprised to hear that any of our butter containing excess moisture as we have been very particular and instructed the butter maker and every one connected with it not to allow any butter to go out of the factory with excess moisture.

Will ask you to kindly defer penalty or tax until we have gone over our records carefully as we feel sure that we will be able to satisfy you that our butter should not be taxed.

Hoping you will grant us this favor, we are,

Yours very truly,

TILDEN PRODUCE CO."

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Plaintiff's Exhibit "C"

"December 3, 1918.

[Tolden] Produce Company,
Saint Paul, Minn.

Gentlemen:

This office is in receipt of a copy of Revenue Agent Nutt's report setting forth that there was found on the market certain butter manufactured by you to contain excessive moisture, and that there is under seizure in Chicago 9360 pounds of such butter upon which there is a stamp tax of $936.00.

Please inform this office if you are desirous of paying this stamp tax and having the butter released to be reworked and place in a normal condition. In case you wish to have this butter reworked you should forward to this office certified check in the amount of $936, also advise as to where you are desirous of having same reworked.

Respectfully,

E. J. LYNCH,
Collector."

JJD-go

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313 Plaintiff's Exhibit "D"

"Dec. 6th, 1918.

Mr. E. J. Lynch, Collector,
Internal Revenue Service,
St. Paul, Minn.

Dear Sir:—

Your letter notifying us of the report of Revenue Agent Nutt made on a lot of butter which is stored in Chicago received, in reply will say, that our records show this butter to be well within the requirements of the law.

There seems to be no way in which we can protect our interests except to pay the stamp tax under protest and have the butter returned to us in this city to be reworked.

We asked you to have the butter shipped to St. Paul in refrigerator car and when it arrives please advise us, and at the same time please arrange matters so that we can take samples under your supervision.

We enclose check for $936.00, the amount of the stamp tax and ask to be furnished with a receipt showing that the amount is paid under protest.

Yours very truly,

WAT/ED TILDEN PRODUCE CO."

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Plaintiff's Exhibit "E".

"Treasury Department, Original.
U. S. Internal Revenue,
Form 1.

Receipt for advance payments—Regular taxes.

Collector's Office...District of Minnesota...Form 58..1918...;Dec.
(Year) (Mont

At...St. Paul...Date..Dec...11,..1918..Form 23.....;....
(Year) (Mon

S. T. Adult. Butter

Paid Under Protest (Description of collection, same as in column 3,
9360 lbs. @ 10c

Form 58, for unassessable items.)

: Tilden Produce Co., :
: :
: St. Paul, Minn. :

$936.00

U. S. Internal
Revenue Cashier
Received payment,

Paid

Dec. 11, 18. Collector of Internal Reven
By———

314 Plaintiff's Exhibit "F".

"Washington

T&M—ALB November 24, 1920.
Cl—MR—841
Tilden Produce Co.,
St. Paul, Minn.

Sirs:

Your claim on Form 46 for the refunding of $936.00 stamp tax paid on adulterated butter has been examined and is hereby rejected.

In this connection you are advised that liability to stamp tax was based upon official analysis of samples of butter produced by you and stored on the premises of the Chicago Cold Storage Warehouse Co., State Street Plant, Chicago, Ill. This butter was found to contain 16% or more of moisture thereby bringing the product within the classification of adulterated butter as defined by Section 4 of the Act of May 9, 1902.

In accordance with the law stamp tax at the rate of 10 cents per pound is due when adulterated butter is manufactured or sold or removed for consumption or use.

As the taxes have been legally collected this office is without authority to refund the same. Receipt submitted with your claim is herewith returned.

Respectfully,

WM. M. WILLIAMS,
Commissioner."

Enc. 1.

Defendant's Exhibit "1"

Car of Butter shipped September 28th, 1918.

to Chicago Ill., Via Soo Line, Soo Car #70194

| Lot. No. | | Churn No. | No. of Tubs. | Moisture Test |
|---|---|---|---|---|
| | F | 160 | 17 | 16 |
| | " | 172 | 13 | 15.8 |
| | " | 219 | 15 | 15.4 |
| | " | 232 | 14 | 15.9 |
| | " | 243 | 15 | 15.9 |
| | " | 244 | 13 | 15.3 |
| | " | 251 | 14 | 15.0 |
| | " | 254 | 16 | 16 |
| | " | 255 | 13 | 15.7 |
| | " | 256 | 11 | 15.7 |
| | " | 266 | 14 | 15.5 |
| | " | 267 | 13 | 15.9 |
| | " | 280 | 14 | 15.8 |
| | " | 297 | 14 | 15.6 |
| | " | 298 | 15 | 16.0 |
| | " | 308 | 14 | 15.4 |
| 315 | F | 319 | 14 | 15.7 |
| | " | 353 | 13 | 15.9 |
| | " | 361 | 12 | 15.2 |
| | " | 421 | 14 | 15.7 |
| | " | 422 | 14 | 15.8 |
| | " | 424 | 13 | 15.4 |
| | " | 425 | 14 | 15.7 |
| | " | 433 | 14 | 15.9 |
| | " | 436 | 14 | 15.8 |
| | " | 447 | 3 | 15.7 |
| | | Total | 350 | |

316 (Certificate of Judge to Bill of Exceptions.)

The foregoing document having been examined and having been found to contain a full, correct and complete statement of the proceedings had at the trial of the above action, including all the evidence, exhibits, rulings and exceptions therein,

It is hereby allowed and signed as the bill of exceptions of defendant in said action, and as the settled record of the proceedings in said cause.

Dated this 17th day of December, 1921.

WILBUR F. BOOTH
Judge.

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(Approval of Bill of Exceptions by counsel.)

It is hereby stipulated, by and between the parties to the above entitled cause, that the above bill of exceptions proposed by the defendant, and the above settled case or record proposed by the defendant, may be allowed and signed by the Judge of said Court as and for the bill of exceptions and settled case in said action, and may be filed as the bill of exceptions of the defendant in said action, and the settled record or case in said action.

Dated December ——— 1921.

MOORE OPPENHEIMER & PETERSON
[Attorney] for Plaintiff

ALFRED JAQUES
United States Attorney
for the Defendant.

317 (Endorsed): Bill of Exceptions. Filed in the District Court on December 17, 1921.

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318 (Assignment of Errors.)

United States District Court
District of Minnesota
Third Division.
No. 1126.

Tilden Produce Company,
a corporation,
Plaintiff,

vs.

E. J. Lynch, Collector of Internal Revenue, and Margaret C. Lynch, Executor of the Last Will and Testament of E. J. Lynch, deceased, and of his estate,
Defendant.

Now comes the defendant in the above entitled cause, and files the following assignments of error upon which defendant will rely in the prosecution of the appeal in the above entitled cause, bringing up for review the judgment made and entered in said court on the 23rd day of June, 1921.

I.

That the United States District Court for the District of Minnesota, Third Division, erred in refusing to give the following instruction to the jury on the request of defendant, to wit:

"The Act of May 9, 1902, in Section 4, provides that any butter in the manufacture or manipulation of which any process or material is used with intent or effect of causing the absorption of abnormal quantities of water, milk or cream, is adulterated butter. It appears clearly in this case that following the enactment of the above law, the Commissioner of Internal Revenue, by and with the consent of the Secretary of the Treasury, made and promulgated a regulation which provides as follows:

'The definition of adulterated butter as contained in
319 the act of May 9, 1902, embraces butter in the manufacture of which any process or material is used whereby the product is made to 'contain abnormal quantities of water, milk or cream,' but the normal content of moisture permissible is not fixed by the act. This being the case, it

becomes necessary to adopt a standard for moisture in butter, which shall in effect represent the normal quantity. It is therefore held that butter having 16 per cent or more of moisture contains an abnormal quantity and is classed as adulterated butter.'

This regulation has all the force and effect of law, and was and is binding upon the plaintiff in this case, and I therefore charge that if the butter in question contained 16 per cent or more of moisture, then plaintiff cannot recover for the reason that such butter is adulterated within the meaning of such regulation."

II.

That the above court erred in refusing to give the following instruction to the jury on the request of defendant, towit:

"You are instructed that if you find from the evidence that the butter involved in this case contains 16 per cent or more of moisture, that you must find that it contained an abnormal quantity of moisture."

III.

That the above court erred in refusing to give the following instruction to the jury on the request of the defendant, to wit:

"Third, I request that the court instruct the jury that if the jury believes that the plaintiff was accorded an opportunity to be heard by the Commissioner upon the question whether the butter was adulterated, and did not take
320 advantage of that opportunity, then their verdict must be for the defendant."

IV.

That the above court erred in refusing to give the following instruction to the jury on the request of the defendant, to wit:

"That if in seeking to bring the moisture content as near to 16 per cent as possible plaintiff overstepped the mark, then the verdict must be for defendant."

V.

That the above court erred in refusing to give the following instruction to the jury on the request of the defendant, to wit:

"That if plaintiff has adopted any process, used any material, or in any way manipulated its butter so as to cause absorption of more moisture than would ordinarily be absorbed, and 16 per cent or more has been inadvertently absorbed, then the verdict must be for the defendant."

VI.

That the above court erred in refusing to give the following instruction to the jury on the request of the defendant, to wit:

"That if it believes that the butter in question contains 16 per cent or more of moisture, then you are instructed as a matter of law that the moisture content was abnormal, and your verdict must be for the defendant."

VII.

That the above court erred in refusing to instruct the jury at the request of the defendant to find for the defendant.

VIII.

That the above court erred in instructing the jury at the request of the plaintiff to find a verdict for the plaintiff in the sum of Nine Hundred Thirty-six Dollars ($936.00), with interest thereon at six per cent since December 11, 1918.

321 Wherefore, defendant asks that said judgment be reversed; that said District Court for the District of Minnesota, Third Division, be ordered and directed to enter a judgment in favor of the defendant, or to grant a new trial of said cause.

ALFRED JAQUES
United States Attorney
for the Defendant.

Endorsed: Filed in the District Court on December 17, 1921.

322 **Petition for Writ of Error.**

To The Honorable District Court of the United States, District of Minnesota, Third Division:

The defendant in the above entitled action, feeling herself aggrieved by the judgment rendered and entered in the above entitled action on the 23rd day of June, 1921, comes now by her attorney, and petitions the Honorable Court for an order allowing said defendant to prosecute a writ of error to the United States Circuit Court of Appeals for the Eighth Circuit of the United States, according to the laws of the United States in that behalf made, and provided, and also your petitioner prays that a transcript of all the proceedings in this cause, together with the assignments of error filed herein, be duly authenticated and that the same be sent to the Circuit Court of Appeals.

ALFRED JAQUES
United States Attorney
for the Defendant.

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323 **Order Allowing Writ of Error.**

Upon motion of Alfred Jaques, United States Attorney and attorney for the defendant in the above entitled cause, and upon the filing of the foregoing petition for a writ of error, and upon the filing of the assignments of error herein,

It is by the Court hereby ordered, that the writ of error be, and the same is hereby, allowed, to have reviewed in the United States Circuit Court of Appeals for the Eighth Circuit, the said judgment entered herein on June 23, 1921.

It is further ordered that all further proceedings in this court be suspended and stayed until the determination of said writ of error.

Dated this 17th day of December, 1921.

WILBUR F. BOOTH
District Judge.

(Endorsed)

Petition for and Order Allowing Writ of Error.

Filed December 17, 1921.

Joel M. Dickey, Clerk. By Margaret L. Mullane, Deputy.

324 Praecipe for Transcript and Election as to Printing.

To Joel M. Dickey, Clerk of said Court:

In the above entitled cause, please make and forward to the Clerk of the United States Circuit Court of Appeals, Eighth Circuit, at St. Louis, Missouri, as and for a transcript of the record on the writ of error from said Circuit Court of Appeals, copies of the following papers:

Complaint, Summons, Stipulation and Order making Margaret C. Lynch, Executor of the Last Will and Testament of E. J. Lynch, deceased, a party defendant, Answer, Reply, if any, Judgment for plaintiff, Bill of Exceptions, Assignments of Error, and prayer for reversal, Petition for writ of error and order allowing same, and this praecipe and election.

The defendant herein files this his notice of election to take and file said transcript in said Circuit Court of Appeals, and that the same be printed under the [suprevision] of the Clerk of said Circuit Court of Appeals, under its rules.

ALFRED JAQUES,
United States Attorney
for the Defendant.

325 Endorsed: Filed in the District Court on December 17, 1921.

326 (Citation and Admission of Service.)

United States District Court
District of Minnesota
Third Division.

No. 1126.

Tilden Produce Company, a corporation,
Plaintiff,

vs.

E. J. Lynch, Collector of Internal Revenue, and Margaret C. Lynch, Executor of the Last Will and Testament of E. J. Lynch, deceased, and of his estate,
Defendant.

To Tilden Produce Company, Plaintiff above named:

You are hereby cited and admonished to be and appear in the United States Circuit Court of Appeals for the Eighth Circuit of the United States, at the City of St. Louis, Missouri, sixty days from and after the date this citation bears date, pursuant to a writ of error filed in the Clerk's office of the United States District Court, District of Minnesota, Third Division, wherein Tilden Produce Company is plaintiff and Margaret C. Lynch, Executor of the Last Will and Testament of E. J. Lynch, deceased, is defendant, to show cause, if any there be, why the judgment rendered against the defendant and in said writ of error mentioned should not be corrected, and why speedy justice should not be done the parties in that behalf.

Witness, the Honorable Wilbur F. Booth, Judge of the United States District Court, this 17th day of December, 1921.

WILBUR F. BOOTH,
District Judge.

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Due service of within Citation is hereby admitted this 19th day of Dec. 1921.

MOORE, OPPENHEIMER & PETERSON,
Atty. Dft.

Endorsed: Filed in the District Court December 19, 1921.

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327
328

329 (Writ of Error and Clerk's return.)

United States District Court
District of Minnesota
Third Division.

No. 1126.

Tilden Produce Company,
a corporation,

Plaintiff,

vs.

E. J. Lynch, Collector of Internal Revenue, and Margaret C. Lynch, Executor of the Last Will and Testament of E. J. Lynch, deceased, and of his Estate,

Defendant.

United States of America—ss.

The President of the United States of America, to the Honorable the Judges of the District Court of the United States for the District of Minnesota, Third Division, Greetings:

Because, in the records and proceedings, as also in the rendition of the judgment of a plea which is in the said District Court, before you, at the June Term, 1921, thereof, between Tilden Produce Company, Plaintiff, and E. J. Lynch, Collector of Internal Revenue, Defendant, manifest error hath happened, to the great damage of the said defendant, as by his complaint appears.

We, being willing that error, if any hath been, should be duly corrected and full and speedy justice done to the parties aforesaid in this behalf, do command you, if judgment be therein, given, that then, under your seal, distinctly and openly, you send the record and proceedings aforesaid, with all things concerning the same, to the United States Circuit Court of Appeals for the Eighth Circuit, together
330 with this writ, so that you have the said record and proceedings aforesaid at the City of St. Louis, Missouri, and filed in the office of the Clerk of the United States Circuit Court of Appeals, for the Eighth Circuit, on or before the 15th day of February, 1922, to the end that the record and proceedings aforesaid, being inspected, the

United States Circuit Court of Appeals may cause further to be done therein to correct that error, what of right and according to the laws and customs of the United States should be done.

Witness, the Honorable William H. Taft, Chief (Seal) Justice of the United States, this 19th day of December, 1921.

Issued at office in St. Paul, Minnesota, with the seal of the District Court of the United States, for the District of Minnesota, Third Division.

JOEL M. DICKEY
Clerk of the District Court of the United States, for the District of Minnesota.

Allowed by
WILLIAM F. BOOTH
Judge.

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United States of America,
District of Minnesota, } ss.
Third Division.

In obedience to the command of the above writ, I herewith transmit to the United States Circuit Court of Appeals for the Eighth Circuit, a duly certified transcript of the record and proceedings in the within entitled cause, with all things concerning the same.

In Testimony Whereof, I hereunto subscribe my name and affix the seal of the District Court of the United States for the District of Minnesota, Third Division.

JOEL M. DICKEY
(Seal) Clerk of the District Court of the United States for the District of Minnesota.

Endorsed: Filed in the District Court on December 19, 1921.

331

332 (Clerk's Certificate to Transcript.)

United States District Court,
District of Minnesota,
Third Division.

I, Joel M. Dickey, Clerk of said District Court, do hereby certify and return to the Honorable, the United States Circuit Court of Appeals for the Eighth Circuit, that the foregoing, consisting of 331 pages, numbered consecutively from 1 to 331, inclusive, is a true and complete transcript of the records, process, pleadings, orders, final judgment and all other proceedings in said cause and of the whole thereof, as appears from the original records and files of said Court, and in accordance with a praecipe for such transcript, a copy whereof appears in said transcript.

In Testimony Whereof, I have hereunto set my hand and affixed the seal of said District Court, (Seal) at St. Paul, in said District, this 28th day of January, 1922.

JOEL M DICKEY
Clerk, U. S. District Court
for the District of Minnesota.

Filed Feb 11 1922 E. E. Koch Clerk

333 (Stipulation to include copy of Defendant's Exhibit 3 in printed record.)

United States Circuit Court of Appeals
Eighth Circuit.

No. 6026.

Margaret C. Lynch, Executor of the Last Will and Testament of E. J. Lynch, Collector of Internal Revenue, deceased,
Plaintiff in Error,

vs.

Tilden Produce Company,
Defendant in Error.

Whereas, Exhibit 3 was omitted from the record in this case by mistake,

Now therefore, it is stipulated, by and between the attorneys for the plaintiff in error and the defendant in error above named, that the accompanying paper, marked "Defendant's Ex. 3," is a true copy of Exhibit 3 as it was introduced in evidence without objection, as shown at page 115 of the record on file herein.

It is further stipulated that such Exhibit 3 shall be printed as a part of the record on file herein, and the Clerk of said Circuit Court of Appeals is hereby authorized and requested to cause the same to be so printed in such record.

ALFRED JAQUES
United States Attorney.

MOORE, OPPENHEIMER & PETERSON
Attorneys for Defendant in Error.

334 No. 1126 Defendant's Ex. 3 Av. 16.76.

C. E. McN.

Nov 19 1918
Copy Sent———

Treasury Department
Bureau of Internal Revenue
Washington

Office of Chief Chemist
The Commissioner
of Internal Revenue.

November 18, 1918.

Sir:

I have the honor to report that an examination has been made in the chemical laboratory of this office of 171 sample of butter sent in by Rev. Agent, Chicago, with letter of transmittal dated 11/1/18. Samples recd. 11/8/18, by mail: wax sealed. (Referred to M)

Description of product submitted: Lab. Nos. 37082-37252: Agts. Nos. 1—171: One hundred seventy-one samples of suspected adulterated butter, representing a lot of 350 full 60-lb. tubs, bearing Lot #91313, found on the premises of the Chicago Cold Storage Warehouse Company, State Street Plant, Chicago, shipped by the Tilden Produce Company, St. Paul, Minnesota, and placed in storage for their account. Samples taken November 1, 1918, by Dep. Coll. Kilcourse, et al. For tub numbers, see letter of transmittal.

Following are the results of analysis:

| Lab. No. | Agts. No. | % Moisture |
|---|---|---|
| 37082 | 1 | 17.06 |
| 37083 | 2 | 17.87 |
| 37084 | 3 | 16.29 |
| 37085 | 4 | 16.83 |
| 37086 | 5 | 16.35 |
| 37087 | 6 | 17.62 |
| 37088 | 7 | 16.38 |
| 37089 | 8 | 16.14 |
| 36090 | 9 | 16.01 |
| 36091 | 10 | 17.77 |
| 36092 | 11 | 16.43 |

335

| Lab. No. | Agts. No. | % Moisture |
|---|---|---|
| 37093 | 12 | 17.27 |
| 37094 | 13 | 16.91 |
| 37095 | 14 | 15.69 |
| 37096 | 15 | 16.95 |
| 37097 | 16 | 17.60 |
| 37098 | 17 | 17.10 |
| 37099 | 18 | 16.31 |
| 37100 | 19 | 17.63 |
| 37101 | 20 | 16.10 |
| 37102 | 21 | 17.80 |
| 37103 | 22 | 16.73 |
| 37104 | 23 | 17.33 |
| 37105 | 24 | 16.26 |
| 37106 | 25 | 17.49 |
| 37107 | 26 | 16.97 |
| 37108 | 27 | 16.47 |
| 37109 | 28 | 16.56 |
| 37110 | 29 | 17.33 |
| 37111 | 30 | 17.53 |
| 37112 | 31 | 16.98 |
| 37113 | 32 | 16.44 |
| 37114 | 33 | 17.72 |
| 37115 | 34 | 17.08 |
| 37116 | 35 | 16.35 |
| 37117 | 36 | 17.36 |
| 37118 | 37 | 16.61 |
| 37119 | 38 | 17.40 |
| 37120 | 39 | 16.80 |
| 37121 | 40 | 17.74 |
| 37122 | 41 | 17.21 |
| 37123 | 42 | 17.64 |
| 37124 | 43 | 17.48 |
| 37125 | 44 | 17.46 |
| 37126 | 45 | 16.44 |
| 37127 | 46 | 16.56 |
| 37128 | 47 | 17.16 |
| 37129 | 48 | 16.93 |
| 37130 | 49 | 16.02 |
| 37131 | 50 | 17.08 |
| 37132 | 51 | 16.24 |
| 37133 | 52 | 17.11 |
| 37134 | 53 | 16.72 |
| 37135 | 54 | 15.77 |
| 37136 | 55 | 17.09 |
| 37137 | 56 | 16.52 |

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| Lab. No. | Agts. No. | % Moisture. |
|---|---|---|
| 37138 | 57 | 17.09 |
| 37139 | 58 | 16.09 |
| 37140 | 59 | 16.60 |
| 37141 | 60 | 17.48 |
| 37142 | 61 | 17.19 |
| 37143 | 62 | 16.79 |
| 37144 | 63 | 16.01 |
| 37145 | 64 | 16.57 |
| 37146 | 65 | 17.89 |
| 37147 | 66 | 16.44 |
| 37148 | 67 | 16.59 |
| 37149 | 68 | 17.72 |
| 37150 | 69 | 17.10 |
| 37151 | 70 | 16.02 |
| 37152 | 71 | 16.57 |
| 37153 | 72 | 16.92 |
| 37154 | 73 | 17.36 |
| 37155 | 74 | 16.39 |
| 37156 | 75 | 16.08 |
| 37157 | 76 | 16.79 |
| 37158 | 77 | 16.79 |
| 37159 | 78 | 16.76 |
| 37160 | 79 | 16.21 |
| 37161 | 80 | 17.43 |
| 37162 | 81 | 16.90 |
| 37163 | 82 | 16.31 |
| 37164 | 83 | 16.67 |
| 37165 | 84 | 16.52 |
| 37166 | 85 | 16.22 |
| 37167 | 86 | 15.94 |
| 37168 | 87 | 15.81 |
| 37169 | 88 | 17.05 |
| 37170 | 89 | 17.35 |
| 37171 | 90 | 16.63 |
| 37172 | 91 | 16.99 |
| 37173 | 92 | 16.43 |
| 37174 | 93 | 16.47 |
| 37175 | 94 | 15.78 |
| 37176 | 95 | 16.48 |
| 37177 | 96 | 16.24 |
| 37178 | 97 | 16.15 |
| 37179 | 98 | 16.14 |
| 37180 | 99 | 16.43 |

337

| Lab. No. | Agts. No. | % Moisture |
|---|---|---|
| 37181 | 100 | 16.23 |
| 37182 | 101 | 17.63 |
| 37183 | 102 | 16.13 |
| 37184 | 103 | 15.71 |
| 37185 | 104 | 17.39 |
| 37186 | 105 | 16.43 |
| 37187 | 106 | 17.78 |
| 37188 | 107 | 16.72 |
| 37189 | 108 | 16.28 |
| 37190 | 109 | 16.73 |
| 37191 | 110 | 17.40 |
| 37192 | 111 | 16.83 |
| 37193 | 112 | 17.05 |
| 37194 | 113 | 16.82 |
| 37195 | 114 | 16.65 |
| 37196 | 115 | 17.62 |
| 37197 | 116 | 16.76 |
| 37198 | 117 | 15.70 |
| 37199 | 118 | 16.77 |
| 37200 | 119 | 17.93 |
| 37201 | 120 | 17.74 |
| 37202 | 121 | 16.45 |
| 37203 | 122 | 16.75 |
| 37204 | 123 | 16.80 |
| 37205 | 124 | 16.87 |
| 37206 | 125 | 16.86 |
| 37207 | 126 | 15.93 |
| 37208 | 127 | 16.73 |
| 37209 | 128 | 16.97 |
| 37210 | 129 | 17.43 |
| 37211 | 130 | 16.28 |
| 37212 | 131 | 15.99 |
| 37213 | 132 | 16.41 |
| 37214 | 133 | 17.59 |
| 37215 | 134 | 16.09 |
| 37216 | 135 | 15.90 |
| 37217 | 136 | 17.13 |
| 37218 | 137 | 15.99 |
| 37219 | 138 | 16.08 |
| 37220 | 139 | 16.56 |
| 37221 | 140 | 17.68 |
| 37222 | 141 | 16.41 |
| 37223 | 142 | 17.69 |
| 37224 | 143 | 17.40 |
| 37225 | 144 | 15.99 |
| 37226 | 145 | 15.94 |